MANAGERIAL RELATIONSHIPS AND SINO-BRITISH JOINT VENTURES:

A Cross-Cultural Analysis of Key Issues in Working Relationships

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by

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ABSTRACT

The arena of international joint ventures has received an enormous amount of research, but is still riddled with privation of empirical examination of micro issues evolving in the social and interpersonal relationship dimension that directly affects joint venture co-operation. Despite an increasing number of UK-China joint ventures in recent years, there have been very few empirical investigations into this arena especially with cross-cultural methodologies. This thesis is aimed at partly filling this lacuna by providing an extensive cross-cultural analysis of four key issues in the context of working relationships between British and Chinese managers in Sino-British joint ventures: the conditions of inter-personal trust, the styles of handling inter-personal conflict, managerial competence and managerial role expectations. The measurement scales of conditions of inter-personal trust (CTI) and styles of handling inter-personal conflict (ROCI-II) were tested for their cross-cultural validity by the LISREL multi-group technique. The evaluation revealed that these America-generated instruments did not possess cross-cultural equivalence with British and Chinese cultures. By moving from "imposed etics" to "derived etics" through LISREL model respecification process, the two instruments were respecified and validated with cross-cultural equivalence for use in the comparative analyses. A multiple regression analysis identified different significant antecedents of inter-personal trust for British and Chinese managers in Sino-British joint ventures. Analyses by *t* test revealed differences and similarities in the perceived behaviour characterised by the factors of conditions of inter-personal trust between British and Chinese managers. Analyses by *t* test also revealed differences and similarities in the styles of handling inter-personal conflict and managerial competence between British and Chinese managers. The qualitative analysis of managerial role expectations exhibited differences between British and Chinese managers in Sino-British joint ventures. Theoretical and practical implications were drawn from the findings both for theory advancement and to provide advice for practitioners. The findings have provided important contributions to the body of knowledge in the arena of international joint ventures and understanding between British and Chinese managers for improved co-operation in Sino-British joint ventures.

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CHAPTER 1 INTRODUCTION

This research project examines the working relationships between the British and Chinese managers involved in Sino-British joint ventures in China by employing the methods established in cross-cultural research. The key issues examined are:

a) the conditions of inter-personal trust;

b) the styles of handling inter-personal conflict;

c) the perceived managerial competency;

d) the managerial role expectations.

The project is empirically-based and is characterised by two features: a) a cross-cultural comparative approach, i.e., the key issues were examined by comparison of the attitudinal characteristics between the British and Chinese managers; and b) a perspective from a "micro-level", i.e., the key issues were examined as they evolve in the work relationships at an inter-personal level.

This introductory chapter presents a brief overview of the research project, the objectives, definitions of some key terms that are used throughout this thesis, and the organisation of the thesis.

1.1 The research project

The complexity and difficulties experienced by the Western and Chinese businesses in setting up and managing joint ventures in China have inspired research efforts in a wide range of disciplines both in the West and in China. A noticeable characteristic of the large volume of literature on joint ventures in China is that most of the research took a "macro-perspective", i.e., focusing on various general economic factors and managerial issues. Given the importance of such a perspective in research, the problems and issues revealed by the studies require new efforts to be made in examining the key issues in managing Sino-foreign joint ventures at a deeper, "micro" level: the inter-personal behavioural aspects.

Furthermore, the advancement in cross-cultural research methodology in both sociology and psychology has compelled researchers in international business (including joint ventures) to question the conventional approach by which one adopts measurement scales (or with some modification) generated in one culture to measure attitudes or perceptions in other cultures without evaluating the equivalence of the measure instruments across the cultures. It can no longer be accepted as an unbiased exercise for research on issues involving latent constructs in more than one culture to use instruments generated in one culture without evaluating its cross-cultural applicability.

However, the area of inter-personal working relationships in Sino-foreign joint ventures have received limited in-depth research. Even more rarely seen are investigations into Sino-foreign joint venture issues based on a cross-cultural approach. This study was an attempt to partly fill this gap.

The study seeks to provide insights into the area of inter-personal working relationships in Sino-British joint ventures. The particular issues chosen are 1) the conditions of inter-personal trust; 2) the styles of handling inter-personal conflict; 3) the perceived managerial competency; and 4) the managerial role expectations. Such focuses have been decided upon after reviewing the literature on international joint ventures, the author's early research on Sino-British joint venture management (Cui Chi, 1993), and pilot interviews with a number of British and Chinese managers involved in Sino-British joint ventures. The examination of the first three issues were based on hypothesis testing. The fourth issue was examined by an exploratory and descriptive approach based on pilot interviews.

As a pre-requisite and important process of cross-cultural research, the study first tested the cross-cultural validity of the two research instruments involving psychometric measurement (i.e., the conditions of inter-personal trust and the styles of handling inter-personal conflict). With the validated measurement instruments, it attempted to characterise the general attitudes and perceptions of the dyadic British and Chinese managers in the same joint ventures on these two research issues, and

identify differences between them. The other two key issues (managerial competency and managerial role expectations) were also analysed with focuses on identifying differences in attitudinal characteristics between the British and Chinese managers in the Sino-British joint ventures.

The findings from the hypothesis testing and qualitative analyses were extended into discussion in terms of theoretical implications for advancing the study of international joint ventures, and managerial implications for improving the working relationships between the British and Chinese managers in the Sino-British joint ventures.

1.2 The research objectives

As a cross-cultural research study, the aim of the investigation was twofold:

1) to test the cross-cultural applicability of the two America-generated measurement instruments (i.e., the scales for measuring the conditions of inter-personal trust, and the scales for measuring the styles of handling inter-personal conflict) in the British and Chinese cultures;

2) to characterise the differences in the general attitudes and perceptions on the four research issues between the British and Chinese managers in the Sino-British joint ventures.

The test of the cross-cultural applicability of the measurement instruments was intended to justify those used in the research, but it also provides additional value in practical implications, for instance, for managerial communication, management training and staff performance measurement in cross-cultural business operations including joint ventures. The comparison of the general attitudes and perceptions was intended to discover how the British and Chinese perceive the most important issues in managing joint ventures. Such information can be extremely valuable for advancing the understanding of international joint ventures in China. It also provides valuable insights for both British and Chinese practitioners since they would not

release their thoughts and attitudes on such issues to each other in their normal contacts.

In order to achieve the twofold aim, the following research objectives are advanced:

1. To evaluate the cross-cultural validity of the measurement instrument for the conditions of inter-personal trust between the British and Chinese.

2. To identify the differences in the conditions of inter-personal trust between the British and Chinese managers in the Sino-British joint ventures.

3. To evaluate the cross-cultural validity of the measurement instrument for the styles of handling inter-personal conflict between the British and Chinese.

4. To identify the differences in the styles of handling inter-personal conflict between the British and Chinese managers in the Sino-British joint ventures.

5. To identify the differences in the perceived managerial competency between the British and Chinese managers in the Sino-British joint ventures.

6. To explore the differences in the managerial role expectations between the British and Chinese managers in the Sino-British joint ventures.

7. To explore the implications of the above findings for improving the inter-personal working relationships between the British and Chinese managers for the successful co-operation in the Sino-British joint ventures.

1.3 Definitions of the key terms

Definitions are important, particularly for the key terms consistently used, because they indicate the nature of, and imply boundaries for, the phenomenon under investigation. To avoid ambiguity and confusion, several key terms that are used

consistently throughout this research project need to be defined and explained as follows:

Joint ventures

There is no universally agreed upon definition of international joint ventures (IJVs). According to the "Financial Reporting of Interests in Joint Ventures" (International Accounting Standard), joint ventures are identified as three broad types - jointly controlled operations, jointly controlled assets and jointly controlled entities. In academic research, researchers have defined joint ventures from different perspectives, but have tended to focus on the issues of co-operation and control (for a detailed discussion, see Buckley, 1985, p.44).

From an operational point of view, the concept of joint ventures must be understood in the context of the relevant legislation of the host country. Since this research involved joint ventures registered and operating in the People's Republic of China, the definition of the joint venture is based on the relevant laws and regulations of the People's Republic of China. The term "joint venture" in this research refers to either of the two types of joint ventures: equity joint ventures and contractual joint ventures.

Equity joint ventures: This type of joint venture is formed by foreign companies, enterprises, other economic entities or individuals with Chinese companies, enterprises or other economic entities within the territory of the People's Republic of China. The joint ventures take the form of a limited liability company. The proportion of the foreign investor is not less than 25% of the registered capital of an equity joint venture (see "The Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures", 1990).

Contractual joint ventures: This type of joint venture is also called "co-operative joint venture". It can take various forms, but differs from an equity joint venture in that capital contributions by the parties may not necessarily be expressed in terms of money. In addition, the parties involved are required by law to prescribe in their

contract such matters as the investment or conditions for co-operation, the distribution of earnings or products, the sharing of risks and losses, the form of operations and management and the ownership of the property upon the termination of the enterprise (see "The Law of the People's Republic of China on Chinese-Foreign Contractual Joint Ventures", 1988). A contractual joint venture may or may not take the form of a legal person.

Sino-British joint ventures

Sino-British joint ventures (SBJVs) in this research refer to the joint ventures, as defined above, formed by British companies, enterprises, other economic entities or individuals with Chinese companies, enterprises or other economic entities.

1.4 Organisation of the thesis

The thesis is divided into seven chapters. Chapter 2 describes theoretical foundations for the present research. It presents reviews of the literature on international joint ventures (IJVs) including studies of IJVs in China, and the British and Chinese managerial characteristics. On the basis of the literature review, a conceptual framework for the present research was developed. It involves the key issues of inter-personal trust, styles of handling inter-personal conflict, managerial competency and role expectation in the context of working relationships in joint venture management. Each of the key issues is described with reference made to the relevant literature in formalising the research agenda.

Chapter 3 discusses the research hypotheses in regard to the issues of conditions of inter-personal trust, styles of handling inter-personal conflict and managerial competency in SBJVs. The theoretical foundation of hypothesis testing was outlined. The hypotheses involved the cross-cultural construct equivalence of the measurement scales of the conditions of inter-personal trust and the styles of handling inter-personal conflict, and the differences in perceptions of the conditions of inter-personal trust,

styles of handling inter-personal conflict and managerial competency between the British and Chinese managers in the Sino-British collaborations.

Chapter 4 presents the theoretical foundations and practical issues with reference to the methodology employed in the present research. The chapter discusses the relevant theories and practices that provide the basis for ascertaining and rationalising the methodology. It outlines the approaches by which data were to be collected, and discusses the techniques used for testing cross-cultural equivalence of the measurement instrument and conducting comparative analyses of the research issues.

Chapter 5 presents the data analyses and findings in detail. The data analyses were conducted in accordance with the twofold broad aim of the research, i.e., testing the cross-cultural equivalence of the research instruments, and identifying the attitudinal differences in the research issues. The research hypotheses were tested based on the survey data. To avoid clutter of focal themes resulting from the analyses, theoretical implications were discussed and the test results of the hypotheses were summarised within each sub-section relevant to the key research issues. The chapter also includes a section which contains an exploratory, qualitative analysis of the managerial role expectations between the British and Chinese managers. The analysis was based on the data from the pilot interviews with the British and Chinese managers in selected SBJVs. Finally, limitations imposed on this research are noted.

Chapter 6 addresses managerial implications with reference to the findings from the analyses of the key research issues. The discussion was practically oriented with statistical details simplified. For improving the managerial relationships between the British and Chinese managers in SBJVs, tentative recommendations on improving managerial practices were made based on statistical inferences from the findings and in the light of relevant information described in the previous chapters.

Chapter 7 provides a conclusion to the research study. Following a recap of the research focuses, it highlights the value of the research findings in terms of

contributions to the theory of IJVs, the cross-cultural research methodology and the management of SBJVs. Finally, directions for further research are proposed.

CHAPTER 2 THEORETICAL FOUNDATIONS

2.1 Introduction

International joint ventures (IJVs) have become an increasingly popular form of inter-firm collaboration and market entry despite their inherently unstable nature (e.g., Inkpen and Beamish, 1997) and lack of satisfaction with their outcome in many cases (e.g., Beamish, 1988; Buckley and Casson, 1996; Geringer and Hébert, 1991; Hladik, 1985). This paradoxical phenomena has stimulated increasing efforts in the studies of the IJVs in different countries, which have resulted in a prodigious amount of research from a wide range of disciplines. In fact, both practitioner and academic interest in co-operative strategies (including IJVs) have "exploded in the past decade, in all disciplines" (Beamish and Killing, 1996).

The substantial amount of research in co-operative strategies has deepened understanding of the circumstances under which firms would find it beneficial to engage in co-operation with other firms (Buckley and Casson, 1988; Parkhe, 1993). While researchers from different disciplines have focused on different dimensions of the IJV problems and cast new light on many important aspects of IJVs, the literature on IJVs has been criticised as fragmented in its orientations (Parkhe, 1993). Parkhe (1993) argues that such a "messy" situation is due to the fact that researchers have not effectively built upon each other's work if the outcome being investigated was different. This orientation in research thus ignores critical issues pertaining to the relationship process that have the potential to link and bridge disparate work on IJVs through core concepts like trust, reciprocity, opportunism and forbearance. These core concepts encompass behavioural variables that are essential to the inter-firm co-operation, and have a significant influence on the dynamics and eventual performance of IJVs.

The incoherence in orientations of research on IJVs may be partly due to, on the one hand, the wide range of factors that impact upon IJVs, which include not just traditional economic factors, but also technological, legal, cultural and psychological

factors (Buckley and Casson, 1996; Geringer and Hébert, 1989). On the other hand, studies of IJVs tend to stress the outcome of collaboration (e.g., survival, control, performance) without adequately recognising the inseparability of the outcome from the process (Hébert and Geringer, 1993; Parkhe, 1993).

As an important form of market entry and development in China for Western firms, IJVs have received great research attention. An increasing number of studies have examined strategic, legal and management issues in setting up and managing IJVs in China (e.g., Beamish, 1993; Davidson, 1987; Dong, Buckley and Mirza, 1997; Nehemkis and Nehemkis, 1980; Pearson, 1991; Wu, 1997). Studies on IJVs in China have provided insights into a wide range of dimensions such as strategic motivation, partner selection, objectives, location selection and human resource management. With the increasing numbers of UK firms engaging in IJVs in China, there is emerging attention to SBJVs (e.g., Glaister and Wang, 1993). However, most of the studies of IJVs in China remained at a macro-level perspective. The dynamics of the micro-level issues involved in inter-personal interactions between managers from different cultures have received limited research attention. Moreover, little research has examined the continuing working relationships between the partners in SBJVs already in operation. It has been even harder to find any in depth empirical research on behavioural issues in joint ventures in China by employing a cross-cultural methodology.

This chapter reviews received theories on IJVs and develops a research framework. In Section 2.2 the main streams of theories on IJVs and studies of IJVs in China are reviewed. In Section 2.3 the studies of British and Chinese managerial characteristics are reviewed. In section 2.4 a research framework for the present research is introduced. In section 2.5 each of the key research issues included in the research framework (i.e., conditions of inter-personal trust, styles of handling inter-personal conflict, managerial competency and role expectation) is described in detail. Section 2.6 draws conclusions.

2.2 A review of the relevant theories on IJVs

Research on IJVs have addressed diverse topics from a wide range of disciplines. Given their theoretically imaginative and methodologically sound ways, the received studies of IJVs were criticised for their incoherence in research orientation and lack of focus on the tightly interwoven aspects of the common phenomenon of IJVs (Parkhe, 1993). According to Parkhe (1993), some of the pivotal questions had not yet been examined, and other industrial-sector-specific case studies were lacking a shared set of research questions organised around an analytical framework, which weakened their ability to aid systematic IJV theory development.

One characteristic of the IJV studies is the heterogeneity of the focuses: various researchers have non-cumulatively focused on different dimensions (Parkhe, 1993). Another characteristic that is unnoticed is the indeterminacy of the contextual foundation of the IJV theories. It is argued that, first, the organisation of IJVs is subject to legal regulations that differ among host countries, which affect the nature of the issues in finance, taxation and management control of the IJV. Second, the factors underlying the problems faced by IJV partners are culture specific, hence the problems and issues underpinning the diverse dimensions need to be examined in a clearly defined cultural context. It would be misleading to establish a single theoretical pattern based on one cultural mix of IJVs and to generalise the relationships between the variables in other cultural mixes of IJVs.

It is argued, therefore, that alternative theoretical models and dimensions of IJVs cannot or should not be made uniform; a variety of perspectives and approaches increase knowledge and understanding on the topic. However, new research should be undertaken on the core concepts of the IJVs identified from the received studies, and the grey areas in which new variables underpinning these concepts and logical relations between them should be identified and examined for deepening the understanding of IJV issues. In this respect, received studies of IJVs have identified that trust, reciprocity, opportunism and forbearance are the core concepts that provide valid theoretical underpinning (Parkhe, 1993, p.229). These concepts tap

behavioural variables at the heart of IJV co-operation, but also they can be linked with the important dimensions such as motives for IJV formation, partner selection and characteristics, control and conflict resolution, and IJV stability and performance. It is on this basis that the theoretical framework for the present research was advanced. The theoretical background from which the focuses of the present research were developed can be categorised in the following streams[1].

2.2.1 Hierarchical-centred approaches

Among the large volume of literature on IJVs, the noticeable three streams of research are transaction cost economics, strategic behaviour, and organisational behaviour (Kogut, 1988). Given their differences in other dimensions, they all capture the dynamism of economic transactions in relation to hierarchical properties evolving from organisational interdependency. For the present research these streams of research are referred to as hierarchical-centred approaches.

The transaction cost economics approach (e.g., Beamish and Banks, 1987; Buckley and Casson, 1988; Casson, 1985; Hennart, 1988, 1991; Williamson, 1975, 1985, 1993) is based on the opportunistic or self-interested nature of human beings (Williamson, 1975, 1985). The focus in this approach is on the governance of contractual relations of the transaction, i.e., to minimise the sum of production and transaction costs.

While production costs are usually associated with factors including the costs of inputs, the degree of scale economies, and the efficiency of the productive technology, transactions costs represent the costs of monitoring efforts, of investing in ways to bond performance, and of cheating. According to Williamson (1975, 1985), three characteristics underlying a transaction should be regarded as conditions that are likely to lead to high transaction costs: asset specificity (i.e., the degree to which

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[1] It should be noted that a number of articles reviewing the received studies of IJVs including studies of IJVs in China can be found in the literature. The literature review in this chapter is selective, including only the sources most pertinent to the key issues examined in this research (Judd, Smith and Kidder, 1991; Frankfort-Nachmias and Nachmias, 1996).

assets are dedicated to transacting with a particular economic partner), uncertainty (which represents the difficulty of predicting and observing cheating), and frequency (which influences whether there is sufficient volume to justify a fixed investment in establishing an organisational solution).

Asset specificity makes a firm vulnerable to self-interested behaviour by another actor, who could conceivably exploit the quasi-rents available as a result of high switching costs of specialised systems. With the presence of uncertainty, contracting becomes increasingly incomplete. The transaction frequency subjects the firm to recurrent contracting costs, hence experiential learning results in first mover advantages over other actors in subsequent bidding rounds.

Transaction cost explanations for the rational of a given organisational design (e.g., IJVs) rest on a comparative-efficiency account of organisational design selection, i.e., its efficiency compared to the set of available alternatives (Roberts and Greenwood, 1997). Joint ventures are characterised with two issues: joint investment in ownership and control and monitoring rights (Kogut, 1988). The transaction costs approach predicts that joint ventures will be chosen when parents need complementary intermediate inputs whose purchase on the market would entail high transaction costs, and which would be costly to obtain through replication or full acquisition. Furthermore, the efficiency of a joint venture is dependent on the convergence of the goals of parties to the joint venture, or, failing this, on the degree to which opportunism by the partners can be controlled by other means such as contracts or hostages (Hennart, 1991).

Strategic-behaviour approach (e.g., Kogut, 1988; Kogut and Singh, 1988) to the explanation for engaging in joint ventures rests on maximising profits. In other words, a joint venture will be chosen not because it represents the minimum-cost institution, but it maximises profits through improving a firm's competitive position vis-à-vis rivals. Hence, the major differences between the implications of transaction cost and strategic behaviour analyses are the identification of the motives to co-operate and the selection of partners (Kogut, 1988). According to Kogut (1988), the

strategic-behaviour view is seen as compatible to the transaction-cost-economics approach in that many of the issues of bilateral bargaining (Harrigan, 1985) in Williamson's paradigm are also relevant to the design of the collusive agreement when two firms decide to collude.

The organisational behaviour approach to the explanation for joint ventures is derived from organisational theory, which stresses co-operative motivations (Kogut, 1988). In this approach, firms are conceived as organisations embodying different skills. As these skills are embedded in complex organisational routines, the transfer of organisational skills through the market or through a license may be impeded. Furthermore, organisational knowledge is very likely to be "tacit" (Polanyi, 1967), therefore the transfer of such knowledge can only be carried out if the organisation is itself replicated.

The implications are, when a firm desires to sell a portion of its technological competence, but that knowledge is organisationally bound, a joint venture serves as a vehicle that better allows for the transfer and imitation of complex and tacit organisational routines (Kogut, 1988). In this way a firm engages in a joint venture so that it can retain the capability of organising a particular activity while benefiting from the superior production techniques of a partner. As Kogut (1988) has pointed out, "a joint venture is encouraged under two conditions: one or both firms desire to acquire the other's organisational know-how; or one firm wishes to maintain an organisational capability while benefiting from another firm's current knowledge or cost advantage".

Given the distinct focuses of the three perspectives of transaction cost, strategic-behaviour, and organisational-behaviour on IJVs, they share a common orientation that hinges on explanations for the *choice* of a market entry mode. As Kogut (1988) noted, transaction-cost analysis predicts joint ventures as an efficient solution to the hazards of economic transactions. Such a view is regarded as fitting reasonably well for the choice of how to co-operate when the transaction has little effect on downstream competition. The strategic behaviour perspective views joint ventures in

the context of competitive rivalry and collusive agreements to enhance market power. It provides a more informative framework for the investigation of how joint ventures affect the competitive position of the firm. The organisational-behaviour approach perceives joint ventures as a vehicle by which organisational knowledge is exchanged and imitated (though controlling and delimiting the process can be itself a course of instability). It is regarded as being able to explain joint ventures in industries undergoing rapid structural change, whether due to emergent technologies which affect industry boundaries or the entry of new (and perhaps foreign) firms.

Although the three perspectives provide sound theoretical foundations for the exploration of IJVs as one of the alternative market entry strategies, issues pertinent to the continuing co-operative relationships in IJVs (i.e., IJVs already in operation) involve more social and human behavioural factors, which are not adequately explored in depth in the three streams of studies. It has been noted in the literature that investigation of IJVs has tended to emphasise the outcome of collaboration (e.g., survival, control, performance) without adequately recognising the inseparability of the outcome from the process (Parkhe, 1993; Hebért and Geringer, 1993; Madhok, 1995a, 1995b).

Madhok (1995a, p.57) referred to the approaches based on opportunism and contractual mechanisms as the contract-centred approaches[2]. Criticism against the contract-centred approaches has pointed out that they focus narrowly on the economic aspects of exchange and neglect the social context within which the relationship is embedded (Beamish and Banks, 1987; Madhok, 1995a, 1995b). It is argued that the contract-centred approaches devalue the full potential benefits from the resource-sharing relationship, and fail to recognise the potential for effective reduction of the costs inherent in shared ownership through nurturing the social quality of the relationship (Jarillo, 1988; Johanson and Mattson, 1987; Madhok, 1995a, 1995b; Ring and Van de Ven, 1992). They also hinder the attainment of co-

[2] In another paper (1995b) Madhok referred to the approaches based on formal control through ownership as the ownership-centred approaches, which are in essence based on the transaction costs theory. In this thesis the term "contract-centred approaches" is referred to since it better captures the basic elements of the approaches.

ordination efficiencies that are facilitated by a mutual orientation toward one another based on trust and equity in the inter-organisational relationship.

More recently, a few studies have advanced research of IJVs with new orientations. For instance, Buckley and Casson (1996) extended internalisation theory into an economic model of strategic choice of IJVs. Chi and McGuire (1996) examined the interaction of transaction cost and strategic option considerations and developed a framework for integrating the transaction cost and strategic option perspectives on IJVs. Reuer and Miller (1997) examined IJV-internalisation from a perspective of agency costs and parent-firm performance implications. Barkema, Shenkar, Vermeulen and Bell (1997) examined the longevity of IJVs by employing organisational learning theory. These studies have shed new lights on the intricacies of IJVs and can be seen as encouraging advance in the study of IJVs. However, except for Buckley and Casson's (1996) emphasis on the important roles of culture and *socially mediated trust* in maintaining "mutual insurance" between IJV partners, the main focuses in these studies are still confined to the rationality of IJV mode choice.

2.2.2 Relational-centred approaches

Some other recent studies have emphasised the importance of examining joint venture issues with a relational-centred approach building upon the network and relational contracting theories (e.g., Madhok, 1995a, 1995b; Ring and Van de Ven, 1992). The relational-centred approach emphasises trust as a crucial concept in understanding inter-firm relationships. It takes a co-operative orientation towards inter-firm interaction which centres around the quality of the relationship. In this respect, a relationship is regarded as a potential asset to be developed over time through inter-action; investment in the relationship process is viewed as a form of long-term task in which co-operation yields high returns and enables the firm to benefit in the future from mutual adaptation (Hakansson, 1982; Hakansson and Johanson, 1993; Johanson and Mattsson, 1987; Madhok, 1995a). The importance of this relational dimension in IJVs is well captured by Dunning (1993):

> "as in a marriage - the real binding force of an interfirm alliance rests not in the formal terms of the agreement, but on the trust and forbearance established between the two parties. ... the complexities of organizing a global firm suggests that an authoritarian hierarchical relationship is giving way - in part at least - to a cooperative heterarchical relationship. Such a relationship is governed less by authority and more by the need to benefit from a sharing exchange of ideas, knowledge, values between parts of a heterarchy[3], so that the heterarchy, as a system, may flourish" (p.44).

It is observed (Madhok, 1995a) that transaction cost logic deals primarily with the structural dimension of the relationship (Zajac and Olsen, 1993), and accounts mutual forbearance (Buckley and Casson, 1988) on the negative side of human nature, i.e., it is costly for them to do otherwise. The relationship-centred approach focuses on the nature and pattern of interaction between the actors, i.e., the social dimension of the relationship. It emphasises more on the positive side, in which mutually oriented action occurs in order to imbue the relationship with value and increase the joint benefits (Madhok, 1995a).

As Beamish and Banks (1987) point out, mutual need for the IJV partner's resources makes shared ownership more conducive for encouraging participation while the presence of mutual trust and commitment restrains the transaction costs due to opportunism, small numbers bargaining and uncertainty and facilitates information sharing. Lower costs of transacting can be achieved from the development of the relationship over time since a greater knowledge of the partner would result in a lower scope for opportunism and greater trust over time would lead to a lower proclivity towards being opportunistic (Jarillo, 1988; Ring and Van de Ven, 1992; Geyskens, Steenkamp, Scheer, and Kumar, 1996).

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[3] "Heterarchy" is a new conceptualisation for the modern corporation proposed by Hedlund (1993) in his challenging of the often implicit and taken for granted belief in the hierarchy as an efficient and effective mechanism for social organisation. In his view the heterarchy is neither a stable ordering of jobs, roles and transactions, nor is it a particular structure or governance mode; instead, it is a mechanism for constantly selecting and adapting structure and governance mode.

With the established inter-firm relationship through IJVs, the inter-firm interaction is characterised by more repeated, relational exchange (or "recurrent and relational contracting" in Ring and Van de Ven's, 1992, terms) than single-transaction-based buyer-supplier relationships. Such continuing economic relations "often become overlaid with social content that carries strong expectations of trust and abstention from opportunism" (Granovetter, 1985, ctd. in Williamson, 1993). Given the importance of the social content, in particular the institutional environment, "transaction cost economics, in its preoccupation with governance, has been neglectful of that" (Williamson, 1993). As Madhok (1995a) argues, in contrast to more contractual exchange, such relational exchange is characterised by merged rather than linked transactions, larger investments, higher switching costs, higher strategic emphasis, and a more complex web of social and operational inter-dependence. In this sense, the flexibility and efficiency of the inter-firm relationship reside not in the ownership structure *per se*, but superior co-ordination and conflict resolution. In other words, the crucial issue is not the ownership form, but the "relationship management" (Madhok, 1995b), since ownership in and of itself is a static mechanism and is insufficient to overcome the issue of self-interested behaviour (Perrow, 1986).

Other studies (Datta, 1988; Lorange and Roos, 1991, p.26; Forrest, 1992, p.34) have also emphasised the "personal chemistry" and communication between the management of the parent firms as a critical factor in IJVs' success. On the basis of extending the conventional internalisation theory, Beamish and Banks (1987) argue that IJVs were more efficient than wholly owned subsidiaries for the multinational enterprises (MNE) in less developed country (LDC) markets under certain circumstances. With mutual commitment and trust between the IJV partners, the potential threats posed by opportunism and a small numbers condition can be reduced to a point where IJVs become a more efficient means of dealing with environmental uncertainty even in the face of bounded rationality (Beamish and Banks, 1987).

Inter-firm collaboration possesses both conflict-generating and relationship-bonding properties, and the efficiency of the co-operation can only be achieved when a given

amount of mutual forbearance generates the largest possible amount of mutual trust (Buckley and Casson, 1988). It appears that the hierarchical-centred approaches are outcome oriented, relatively static and neglect the critical factors such as trust and conflict solution inherent in the social dimensions of inter-firm relationships (Parkhe, 1993; Hebért and Geringer, 1993; Ring and Van de Ven, 1992). Such approaches at a more macro strategy-structure-ownership level are not adequate to obtain the subtle and fine-grained insights into the social and "personal chemistry" dimensions of inter-firm co-operative relationships. As Beamish (1985) noted, the social dimension governing work relationships in IJVs is instrumental in explaining part of the problems that managers experience in IJVs. It is argued that issues pertinent to social and "personal chemistry" dimensions require more in-depth studies at the micro, inter-personal relationship level based on the relational-centred approach.

In spite of their differences in focus, the hierarchical-centred approaches and the relational-centred approach complement one another and neither one can be neglected. However, it is reasonable to suggest that the cost-avoiding emphasis of hierarchical-centred approaches alone is becoming increasingly inadequate, and it is more critical to realise the synergistic potential arising from firm complementarities on the basis of value creation through "relationship management" (Madhok, 1995a).

2.2.3 Studies of joint ventures in China

Since 1979 when the People's Republic of China opened its economy to foreign investment, IJVs have been used as an important form of market entry into China from foreign businesses' perspective, and an important form of introducing foreign direct investment and advanced technology and management skills from the Chinese government and local partner's perspective. As the numbers of IJVs in China as well as reports of problems are rapidly increasing, the volume of studies of IJVs in China has expanded to such an extent that it perhaps currently outstrips the studies of IJVs in any other single country.

Given the noticeable advance in research on IJVs in China, the general situation has not been seen as encouraging. Beamish (1988) noted that most of the studies on IJVs in China tend to be either anecdotal from the perspective of foreign firms, or promotional from the Chinese perspective. In a more recent review of the studies on IJVs in China, Fan (1996) has criticised the arena as "seriously under-researched, with many areas remaining virtually untouched".

In Fan's (1996) review of the published studies up till 1994, several weakness of the studies of IJVs in China were observed. First, with only few exceptions (e.g., Child, Li, and Watts, 1990; Beamish, 1993; Pan, Vanhonacker, and Pitts, 1993) the majority of the studies were based on cases of American companies. Although IJVs formed by overseas Chinese from Hong Kong and Taiwan accounted for nearly three quarters of the total number of IJVs formed in China, very little research was on these joint ventures. Joint ventures formed with Japanese firms received little research despite the number of such ventures ranking on top of the Japanese IJVs in developed countries. Secondly, little efforts were devoted to systematic research. For instance, there were no longitudinal studies; some case studies were based on a single firm or personal experience or anecdotal evidence. Thirdly, most of the studies remained on issues of "what" and "should", but little attention was given to issues of "why" and "how". Finally, studies on IJVs in China by Chinese authors were mostly written in Chinese and being scattered in different sources. The majority of these studies were promotional rather than academic research in nature, with little empirical analyses.

More recently, increasing numbers of studies of IJVs in China have been published in Chinese in the P.R. China. The majority of them were focused on financial and macro-policy issues[4]. A few articles reviewed labour and salary issues in IJVs in China. The general approach was still descriptive rather than empirical, with only few exceptions such as Li and Xu's work (1994).

[4] The sources of such publications identified in the process of the present research are not presented here since they are written in Chinese. A translation of the titles can be made available on request.

Meanwhile, in the West, studies of IJVs in China have expanded in scope and depth. For instance, Kim (1996) used case studies of IJVs formed between Hong Kong and China to examine the IJV formation patterns and development based on the two dimensions of partner status and IJV content. Pan (1996) examined the traditional key ownership determinants (advertising intensity, foreign capital input, country risk of China, IJV investment amount, cultural distance, competitive intensity) and new variables (IJV contractual duration, local partner state ownership, local partner alignment, foreign partner alignment, IJV location) on their impact on foreign ownership preferences among US, European and Japanese firms in setting up IJVs in China. Wu (1997) examined the determinants of EC firms' choice between licensing and joint ventures in China. Dong, Buckley and Mirza (1997) provided perhaps the most updated information on the motivations for and determinants in partner selection in forming joint ventures in China based on the samples of Northern America, Europe, Japan and overseas Chinese partners.

A few other more recent studies of IJVs in China have been reported in Beamish and Killing (1997) on co-operative strategies from Asian Pacific perspectives. For instance, Gray and Yan (1997) employed a "structural inertia" approach (i.e., the impact of founding characteristics on subsequent structure and performance of organisations, based on Stinchcombe's work in 1965) involving cases of US-Chinese joint ventures and revealed that relative bargaining power and possibly early success left an imprint on the IJV's management control structures. Child, Yan and Lu (1997) refined the concepts of IJV ownership and control and identified that while equity share is a stronger lever for exercising strategic control than for operational control, non-contractual resourcing provides a further basis for exerting operational control. Li and Shenkar's (1997) study from the perspectives of local Chinese partners found that equity IJVs are more likely to be chosen when the Chinese partners intend to explore international markets via exports and when the proposed project is a new venture rather than a modernisation or expansion of existing facilities of local partners. It is worth noting that Li and Shenkar (1997) pointed out that when applied to a "non-traditional" setting such as China, transaction costs, strategic behaviour and learning considerations need to be treated as country-specific variables

and may need some adaptation when incorporating them into the existing frameworks. Luo and Chen (1997) carried out research on the simultaneous effects of business and investment strategy variables and their interactions on the multidimensional performance of IJVs in China. Their findings suggest that foreign partners of IJVs should use different, country specific business variables (e.g., product quality, R&D intensity, firm size, advertising) and analyse the means-to-an-end relationship between specific business strategy variables and specific dimensions of IJV performance to achieve a good fit between parent-level strategy (investment strategy) and IJV-level strategy (business strategy).

While recent advances in studies of IJVs in China have become more encouraging than Fan's (1996) review of studies up to 1994, some gaps can still be observed as being under-researched. For instance, the majority of the studies appear to still be confined to the issues related to general, macro factors other than micro-level factors. It appears that little efforts have been made in examining IJVs in China by employing a relational-centred approach despite its importance which has been addressed in the literature (e.g., Madhok, 1995a, 1995b; Ring and Van de Ven, 1992).

In addition, few studies on IJVs in China have been undertaken to employ cross-cultural research methodologies (although some attempts can be found to minimise bias by using some statistical remedies). As the literature on cross-cultural research points out, one of the earliest decisions in research is the choice of the theoretical construct to be examined, which is already susceptible to the influence of bias when the research settings involve different cultures (Berry, Poortinga, Segall, and Dasen, 1992). This is because the constructs that are chosen may not be similarly defined in all cultural groups. In addition, bias can also be introduced by the choice and administration of instruments because items can be inadequate when used in different countries (van de Vijver and Leung, 1997). Another typical bias can be introduced by "statistical conclusion invalidity" (Cook and Campbell, 1979), i.e., all items of an instrument are assumed to be equivalent across the cultures under the study without any statistical checks to support this claim (van de Vijver and Leung, 1997).

It is argued that with the vast growing number of IJVs in China, it is important to extend research attention to issues with regard to maintaining and improving the on-going partner relationship in IJVs in China. Micro-level issues such as those involved in inter-personal working relationships and inter-personal interactions in IJVs should be examined and brought into the frameworks of IJV theories. With advancement of research in other disciplines such as cross-cultural psychology and cross-cultural research methodology, efforts need to be made to employ cross-disciplinary approaches and cross-cultural research methodology in researching wider issues of IJVs particularly those involving behavioural relationships and inter-personal interactions in the IJVs.

2.3 The British and Chinese managerial characteristics

One of the important factors determining IJV success is the compatibility of managerial characteristics between the partners. An understanding of the British and Chinese management styles would be helpful in examining the managerial behaviour between British and Chinese managers working together in the Sino-British joint ventures. There has been a vast amount of studies into Chinese business and management styles (e.g., Child, 1994; Wang, 1989, 1994) and a few studies of British management styles (e.g., Barsoux and Lawrence, 1990; Brewster, Lundmark and Holden, 1993; Terry, 1979). However, only recently has there emerged a limited number of studies systematically comparing the British and Chinese management styles in methodologically sound ways. For instance, Wang and Heller (1993) examined managerial decision-making in Chinese and British industrial organisations; Easterby-Smith, Malina and Lu (1995) considered issues on human resource management; Gudykunst, Gao and Franklyn-Stokes (1996) took the perspective of cross-cultural psychology; and Smith, Peterson and Wang (1996) compared sources for handling managerial events between managers from China, USA and UK. A thorough understanding of the similarities and differences between the two management systems demands a comprehensive investigation into a wide range of key factors and identifying those factors that are cross-culturally comparable.

Nevertheless, this was beyond the capability of the present research in terms of time and financial resources.

In order to provide an meaningful setting for the examination of working relationships between British and Chinese managers in SBJVs, some important characteristics of the British and Chinese management styles are summarised below. This represents an attempt to view the characteristics in a loose sense of comparison in the current research setting, but is not intended to replace a comparative analysis in a strict sense, which is planned to be accomplished with further research in the future.

2.3.1 The British managerial characteristics

Barsoux and Lawrence (1990) have summarised the British management style as "person-driven" not system driven. The British management style is characterised by regarding people as its starting point and the frame of reference. In Britain, there is a conviction that management is based on individuals, not committees, systems or rule books, although a contrary observation was made in an earlier study (Terry, 1979) which states that British managers make most of the major decisions in committees. The findings from the research by Barsoux and Lawrence (1990) about the characteristics of the British management style can be summarised in several dimensions.

Generalism and managerialism-orientation. British managers are found to be "good all-rounders", i.e., a generalist outlook that tends to take the principles of management as universally applicable. They are also managerially conscious, i.e., they do not take management for granted. In their view management can be externalised, which is separable from the technical aspects of a job. In this respect the concept of management is more of a hierarchical threshold, above which people are expected to know how to manage, and below which people are expected to use technical skills. British managers tend not to be especially technically-minded, since such expertise is not deemed to enhance their managerial reputation or performance.

Informality. British managers are seen as informal in personal exchanges. At meetings, for instance, they tend to demonstrate their ability to involve in discussion with subtle amusement. They accept that what is decided behind the scenes is the most important. In connection with their managerialistic outlook, they are consciously manipulative. They have an awareness of politics, and a predilection for informal interaction as a means of solving problems. Management in British organisations is regarded as not just about getting your way, but about getting your way without upsetting others in the process. Hence, refusals will be couched in ambiguity. For instance, when they say "I'm afraid I can't do that at present", it means "no, I don't fancy that at all". It is not that British managers do not say what they mean, simply that they frame their comments in indirect and non-abrasive language. The British managers appear in a certain way humanitarian - they take people as the point of reference, rather than systems objectives. In this respect much is achieved by means of social acceptance, offering or withholding it. For these reasons the British managers tend to find solutions people will accept.

Centrality of humour. British managers are characterised by their readiness to joke about business matters. Humour is generally used as a device for distancing the unpleasant, predictable or boring parts of their lives from their "real selves" by regarding them with less seriousness. Humour may also be used as a safety valve for preserving managerial sanity, perhaps a means of coping with defeat. Humour also serves a constructive purpose in the exercise of their functions, and can clarify ambiguity or dampen tension. In negotiation British managers may use humour to demonstrate incompetence in others and to push people gently off fences. Such "joking mode" is regarded effective in disarming accusations of failure, stupidity or fecklessness. The value of humour is well established in British managers since it makes a situation explicit without risk or reprisal. Humour is regarded important in that it fits in with the British way of getting things done.

Persuasion. Britain is known to be persuasion-oriented. It has been observed that when British managers intend to get their own way, they would try to persuade people into it. In such cases humour is a versatile tool for hitting the right persuasive

note. British managers tend not to engage in open conflict. Open conflict between managers is regarded as something rather ungentlemanly in the British view. It is not seen as essentially creative, as a means of correcting deviations, testing ideas or of proving oneself.

Flexibility. It is observed that the traditional British style in strategic decision-making is intuitive. It tends to be untypical for Briton to arrive at strategies based on conscientious scanning of the environment, systematic evaluation of courses of action and application of SWOT (strengths, weaknesses, opportunities, threats) analysis. In British companies "strategy formulation has more to do with great men impression-mongering over lunch, than with little people preparing data-ridden reports". This intuitive planning is seen as being in tune with the turbulent environment the British managers have experienced. It is thought that "in a game with shifting goal-posts, a bit of muddling through allows the players to take advantage of the constant flux of change and opportunity". British managers seem quite happy with a system based on horse trading, personal relations with the worker representatives and political leverage. In this respect, British managers have a high tolerance for ambiguity, and prefer grey areas in which to manoeuvre and exercise their judgement. They are, by selection and socialisation, pragmatic pathfinders rather than management systems builders.

Similar characteristics were reported by Brewster, Lundmark and Holden (1993). For instance, sometimes British are very frank and open and then they retreat. It is difficult to read their signals in communication. Body language seems to play important part in communication. In a work environment the British are a group. In relation to the state the Britain is an individual. In a normal British company, for instance, the communication system is such that the salesmen has to speak to his regional manager, who speaks to his section manager, who speaks to the divisional manager. It is not easy to identify a consistent UK management style. With the influence of the family business structure in British firms, British managers regard personal and family relationships as important; "the old boy network" ensured that the

selection of managers was based on who one knew and could trust, rather than objective criteria (Chandler, 1986).

Laurent (1986) found that British managers seem to hold a more interpersonal and subjective view of the organisational world. They believe that the ability to create the right image and get noticed for what they do is essential for career success. They view the organisation as a "network of relationships between individuals who get things done by influencing each other through communications and negotiating" (Laurent, 1986). In terms of the most important features for "a good manager", the British managers were most likely to identify flexibility, the stimulation of individual achievement and the creation of a climate of trust (Brewster, Lundmark and Holden, 1993).

2.3.2 The Chinese managerial characteristics

It has been observed that China is perhaps one of the most difficult countries to understand and adapt to (Harris and Moran, 1996). The Chinese management styles have been cultivated by the Chinese cultural values as well as the political and economic systems since 1994. For instance, Vertinsky, Tse, Wehrung and Lee (1990). have found that in China, the traditional values such as ascribed status and loyalty are regarded as bases for identification of a good manager (but these traditional values are not preserved in Hong Kong). The dominant ideology and the regulatory environment in China require participative decision making in organisations. They have also found that in large-sized organisations, Chinese managers value clear and formal rules of action, well-specified lines of authority, and a high degree of control over employees, which are likely to reduce problems of loosing face, contain conflict, and reduce ambiguity. In small and medium-sized organisations, however, relationships between members are well defined and culturally coded, and disciplined and unambiguous relationships emerge through socialisation processes without the need to resort to clear formal standard operating procedures, formal role descriptions, and a clear authority structure.

Given the complexity of the Chinese cultural value and management systems that are still under change, some culturally distinct features of the Chinese management style can be summarised in the following dimensions.

Centrality of "guanxi". The term "guanxi" broadly denotes particularistic inter-personal ties in China. It plays a fundamental role in the Chinese inter-personal behaviour in social, political, organisational and business management contexts. As Ambler (1994) observed, one critical factor underlying many joint venture failures is the significant difference in perspective that exists between Westerners and Chinese in their views of inter-personal relationships in business. The Chinese emphasise the role of relationships in business: if one could successfully establish the relationship, transactions will follow; Westerners tend to build transactions first, and if successful, a relationship will follow. The nature and dynamism of such relationships in China are conceptualised by the term "guanxi". Strictly speaking, guanxi is a latent construct that has no direct translation (Ambler, 1994), although several definitions are found in the literature (e.g., Osland, 1990). Perhaps the most appropriate definition of guanxi is that given by Yang (1994):

> "The word *guanxi* (pronounced *guan-shee*) means literally 'a relationship' between objects, forces, or persons. When it is used to refer to relationships between people, not only can it be applied to husband-wife, kinship and friendship relations, it can also have the sense of 'social connections', dyadic relationships that are based implicitly (rather than explicitly) on mutual interest and benefit. Once guanxi is established between two people, each can ask a favor of the other with the expectation that the debt incurred will be repaid sometime in the future".

Among other theoretical models of guanxi, Hwang's (1983) model of resource distribution has captured the important indigenous components of the concept. According to this model, the two parties to a dyadic interaction are conceptualised as petitioner and resource allocator. Either party in such dyadic interaction may control some kinds of social resource (e.g., money, goods, information, status, service, affection, etc.) that is needed by the other, hence either party may play the role of petitioner in one instance and resource allocator in another. This reflects the

important property of reciprocity in guanxi. In general, the stronger the affective relationship between the two parties, the higher status of the petitioner, the more resources there are under one's control, the larger the probable future reciprocation, and the better social relations with important people that one keeps, the more likely it is that the resource allocator will accept the petition (ctd. in Bond and Hwang, 1993).

Generally speaking, "guanxi" plays a central role in managing business in China. Xin and Pearce (1996) has provided evidence to confirm the role of particularistic personal ties as substitutes for formal structural supports in business relationships in China. As Boisoit and Child (1988) noted, the effects of influence through "guanxi" implies both relationship and related consequences embedded in an often highly differentiated intricate system of overt or covert as well as formal or informal social subnets governed by the latent norm of reciprocity in need of constant maintenance (ctd. in Wilpert and Scharpf, 1990). For this reason, the nature of a "guanxi" and its context is a know-how as well as an asset for a manager in the business networks in China. In fact, many Westerners have well recognised the significance of guanxi and used either representative units or joint ventures as access to the Chinese social networks for securing their businesses in China (Björkman and Kock, 1995).

Centrality of "face". Another concept closely related to "guanxi" is "face". The concept of face is a universal phenomenon; however, what constitutes a desirable face is culturally more specific (Bond and Hwang, 1993; Ho, 1976). The Western process of face-work is defined in two major schools of theories: self-presentation (Goffman, 1955) and situated identities (Alexander and Knight, 1971; Alexander and Lauderdale, 1977). The former defines face as "the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact. Face is an image of self delineated in terms of approved social attributes" (Goffman, 1955). The latter emphasises the specificity of a pattern of social behaviour that conveys an identity particularly appropriate to a social setting or interpersonal context. According to Bond and Hwang (1993), "both refer face and situated identity to the situationally defined self-image which a person deliberately acts out to obtain immediate respect from others in a given instance of social encounter".

In the literature, the Chinese concept of face is identified in two dimensions, "lien" and "mianzi" (Hu, 1944; Tung, 1996). Lien refers to the moral character (decency, integrity). On the one hand it functions as a social sanction against immorality and acts as a strong psychological deterrent (i.e., "pull" factor). On the other, it serves as a powerful motivator (i.e., "push" factor) to comply with established moral standards (Liu, 1993). Mianzi refers to one's status and reputation that have been acquired through one's own efforts (Tung, 1996).

In the Chinese culture it is expected that the social interaction proceeds smoothly in which everyone's claim to face is supported by the evidence conveyed via the other participants (Bond and Hwang, 1993). Bond and Hwang (1993) further classifies the behaviour of enhancing and saving face in the Chinese society into six categories:

1) enhancing one's own face: one deliberately does face-work to enhance one's social or positional status by showing off the kind of qualities that are most cherished by others in one's social network.

2) enhancing other's face: an individual may adopt some tactics of ingratiation to enhance the resource allocator's face so that the latter might reciprocate by allotting resources in a way to benefit the ingratiator.

3) losing one's own face: the losing of face may bring serious consequences for an individual.

4) hurting other's face: one should be sensitive to his or her relationships with those higher or lower on the social scale and be aware of the important and special resources they control.

5) saving one's own face: one attempts to save his or her own face because losing face may result in an uneasy feeling of emotional arousal (i.e., embarrassment, shame, or shyness).

6) saving other's face: in the Chinese society the importance of structural harmony within a group is emphasised, and every person has to concern himself or herself with "right conduct in maintaining one's place in a hierarchical order" (Stover, 1974).

The Chinese managers have strong awareness of face and often tactfully use various strategies in face-work to establish or maintain guanxi. Face is an important norm in guiding people to act and respond in the social interactions including business and management relationships.

Collective decision-making. According to Wang (1994), Chinese managers tend to appreciate joint decision making as they believe that it allows all parties to share the responsibility, hence leading to more rapid decision. In Chinese organisations the concept "managerial transparency" has been emphasised since it represents the degree of management decentralisation and information sharing with members of the organisation. It has been found that utilising and fostering a sense of competence is closely linked with work expectation and job satisfaction which would reduce uncertainties in decision making. Smith, Peterson and Wang's (1996) findings also indicate that Chinese managers rely particularly on rules and procedures (while British managers rely higher on own experience and skills). These are consistent with the general view that Chinese managers are likely to show collectivism and high power distance.

Deference to seniority. The Chinese culture values age and authority. In China age is closely linked with maturity, trustworthiness and seniority (Yao, 1987). Young age in China is often regarded as equivalent to lack of experience and non-dependability, and often face discrimination in decision making and promotion. A study (Tse, Lee, Vertinsky, and Wehrung, 1988) has found that Chinese manifest unquestioned respect for superiors and prefer authoritarian decision styles. For this reason it has been found that joint ventures that match young foreign managers with significantly older Chinese managers may have some difficulties (Osland, 1990). The deference to seniority is also reflected in the strong sense of hierarchy (i.e., order and relationship), which defines one's place and the role in a social relation. Wang and Heller (1993) found that the short-term decision making involved senior managers much more in China than it did in Britain. It has been found that in relationship management the Chinese emphasise the importance of maintaining harmonious inter-personal

relationships and acting in a manner appropriate to one's position in a hierarchical social situation (Stover, 1974).

2.4 The research framework

As discussed in the previous sections, advance in studies on IJVs and IJVs in China compels new efforts to examine fundamental issues in a wider scope and greater depth by building upon the core concepts and findings from received studies with logically sound approaches. The micro-level issues pertinent in the social dimensions of the partner relationship and their impact on the IJV performance have been identified as critically important, but little research has been devoted to this arena.

Dunning (1993) has strongly argued that new efforts should be made to the identification and measurement of culturally related transaction costs and the way in which these might be surmounted, circumvented or minimised. Buckley and Casson (1996) maintain in their recently proposed new economic model of IJVs that culture is one of the key determinants for the choice of IJVs and the set-up cost of an IJV is an increasing function of cultural distance. In addition, they point out that IJVs are characterised by the lack of specificity, i.e., an IJV contract does not specify in detail exactly what technological expertise each partner will contribute to the venture. What is important to the IJV partners is "mutual insurance" (Buckley and Casson, 1996) inherent in the IJV agreement, by which each partner generally agrees to contribute whatever is necessary to achieve the agreed objective of the IJV. For mutual insurance to work, the IJV partner should be trusted to make the appropriate response (Casson, 1991; Ring and Van de Ven, 1994; ctd. in Buckley and Casson, 1996).

While cultural distance is identified as an obstacle to an IJV (Buckley and Casson, 1996), trust mediated through social mechanisms (Buckley and Casson, 1996) motivates the partners to be more willing to exercise the tolerance and perseverance necessary to see the IJV through its difficult times (Beamish and Banks, 1987). In this respect IJVs would be less dependent upon legal devices for their success; they

are more dependent upon managerial perspicacity and persistence (Beamish and Banks, 1987) and reduced cultural distance through shared beliefs and values based on trust between the partners (Buckley and Casson, 1996).

It is worth noting that a large scale study (Li and Xu, 1994) of IJVs in China revealed that the American and European managers had less conflict and communication barriers with their Chinese partners than Hong Kong managers, and the Western managers received better comments on their managerial competencies from the Chinese partners than Hong Kong managers. This finding challenges the general view that there is wider cultural distance between the Westerners and the Chinese than between Hong Kong and the mainland China, hence more problems would be encountered by the Westerners when running IJVs in China. Apparently, Li and Xu's finding suggests that the relationship between the cultural factors and managerial compatibility between the IJV partners may not be linear, at least in the case of joint ventures in China (Li and Xu, 1994). It can be argued, therefore, that given the importance of cultural influences, their impacts on the work relationships between the joint venture partners may be moderated by other factors, of which the most important are objectives for the co-operation and the inter-personal relationships between the foreign and local Chinese managers in the IJVs (Li and Xu, 1994). Indeed, it has been noted that the inter-personal (i.e., the use made of authority over others and of personal relationships with them) and philosophical (i.e., the view taken of time and of changes) features in managerial behaviour are the most susceptible to cultural variation (Arruda and Hickson, 1996).

Thus, it can be argued that the relational dynamics in IJVs raise a new perspective towards a deeper understanding of the performance of the IJVs already in operation. For the IJV theories to be more comprehensive at not only the macro-level but also the micro-level towards understanding IJV's complexity, the relational-centred approaches provide a plausible access to examining trust, conflict solution and other critical issues in the social dimensions that contribute to the performance of IJVs. There has arisen, therefore, a need to examine the on-going work relationships in IJVs

particularly at a micro, inter-personal relationship level. The present research was intended to partly fill this gap.

This research departs from conventional methods used in many received studies in that it focuses on the work relationships at an inter-personal level in the inter-firm co-operation through IJVs. As noted before, IJVs are more dependent on cultural and social factors for their success than hierarchical and legal factors (Beamish and Banks, 1987; Buckley and Casson, 1996; Dunning, 1993). One important reason for the present research to examine the key issues at the inter-personal level is that business relationships are based on relations that evolve between individuals in the firms (Holm, Eriksson and Johanson, 1996). Inter-personal contacts provide a mechanism for reducing the cultural distance between individuals (Cunningham and Homse, 1986, ctd. in Björkman and Kock, 1995). Limerick and Cunnington (1993) emphasise nine crucial competencies for managing networks within and across organisational boundaries. Among this list of competencies, inter-personal dynamics between key actors within a network or alliance are critical elements, and trust is regarded as the most important factor among them. Lane and Beamish (1990) provided evidence that some firms invested heavily in activities geared to maintaining the personal relationships with the IJV partners.

According to London (1995), inter-personal relationships develop through communication based on "consensual frames" -- the mutual expectations people have for each other's goals and behaviours. In work relationships, dyadic relationships develop through not only overt inter-personal behaviours but also internal subjective processes (e.g., attribution, assessment, and expectations). In these processes the consensual frames include task achievement, task instrumentality, and task-specific competence (Gabarro, 1990; London, 1995). In other words, mutuality of expectations results from expectations about a) what the task is and what the outcomes of the joint endeavour should be, b) how the two parties should actually work with each other, including assumptions about process as well as responsibility, and c) how the two people work singly and independently on the joint task. These in turn are affected by each other's assumptions about trust and power within a

relationship (Gabarro, 1990). Researchers have also emphasised that competence in interpersonal relationships is central to emerging demands on leaders and managers (London, 1995).

For this research, the inter-partner relational maintenance in a IJV provides a plausible platform for such analyses. This is because involvement in external collaborations such as IJVs transforms the internal organisation of firms and their managerial functions, which leads to greater importance being assigned to boundary-spanning personnel, and personnel involved closely with external partners assume more salience within the firm (Sydow, 1991; Kanter and Myers, 1991; ctd. in Powell, 1996, p.60). The organisational structure may vary in different IJVs; the job positions frequently change between the members of the management of an IJV. No matter how these factors change, the need for communication and relational maintenance between the members of the management from the participating parties predominates the interactive relations between the partners. The inter-personal connection always plays the most important role in the maintenance of working relationships between the partners, and it is one of the decisive factors for the success of the co-operation in a IJV (Kanter, 1994, p.97; Koot, 1988, p.360). Beamish (1988) has noted that "the quality of interpersonal relationships is a better predictor of successful conflict resolution than legal and contractual considerations". To put it differently, "it is the people involved who will make or break an alliance or joint-venture" (Lyons, 1991, p.143). The significance of the working relationship at the inter-personal level in IJV performance may be better summarised by quoting Meschi (1997):

> "Most of the problems encountered in international joint ventures can be traced back to cultural factors ... Beneath the cultural issues lie individual and collective frictions that can arise between expatriate and local professionals working in a joint venture. ... personal, interpersonal, group, and intergroup dynamics involving the personnel of two or more companies will be decisive elements in the success of an international joint venture (Perlmutter and Hennan, 1986; Lane and DiStefano, 1988; Buono and Bowditch, 1989; Lane and Beamish, 1990; Meschi and Roger, 1994)".

Following the conceptualisation of maintenance in the sociological research (Canary and Stafford, 1994, pp.5), the concept of inter-partner relational maintenance in a IJV is defined as actions and activities directed to sustain desired relational definitions between the dyadic managers from the participating parties. The "actions" and "activities" involve both interactive and non-interactive behaviours to maintain the relationships. "Sustain" means that maintenance behaviours function not only to keep a dyad together but also to uphold desired relational definitions, and that relational properties erode without the benefit of maintenance behaviours. By "desired relational definitions" it refers to important features that indicate the character of the relationship.

Another important property of IJVs is the expected co-operative orientation from the partners. Co-operation can be generated by increasing cohesiveness in working relationships (Argyle, 1991, p.119). This means that co-operation will develop and sustain in a working relationship when the members in the relationship like one another and enjoy each other's company. Cohesiveness is most important where help and collaboration are needed.

A well-known theory from Deutsch (1949) states that people co-operate towards shared group goals, which are linked to individual goals, and they decide to do this as the result of rational cognitive decisions. With the rational cognition as the basis, co-operation in any work relationships could not occur without communication and social interaction between the individuals involved in the relationships.

It is posited, therefore, that in the context of IJVs, some relational properties are critical components of the "desired relational definitions": trust, conflict solution, perceived managerial competency, and role expectations (e.g., Buckley and Casson, 1988; Dymsza, 1988; Kanter, 1994; Schaan and Beamish, 1988; Powell, 1996). These properties portray the nature of the relationships and indicate relational stability between the managers from different cultures in a IJV. Individuals from different cultures have identifiable behavioural styles reflected in the relational features of trust, conflict solution, managerial competency and role expectations. Differences in these

characteristics may cause unintentional misunderstandings, hence affect the maintenance of the work relationships in IJVs. As Meschi (1997) points out, "Partners' intent on collaborating and producing valuable interorganizational synergy, may in fact present underlying cultural differences that seriously jeopardize the integration of their operations". Apparently, these properties are important dimensions to "culturally related transaction costs" (Dunning, 1993), which are different from the traditional transaction costs based on opportunism. It must be stressed here that taking on this perspective does not mean to substitute other approaches discussed before (e.g., transaction cost economics, strategic-behaviour, and organisational-behaviour); it is meant to be complementary to the received approaches by providing further insights from a different, micro-level inter-personal relationship angle.

Research in the IJV is required to develop theoretical explanations, falsifiable hypotheses, and empirical tests that tap the psychological, sociological and strategic elements. To operationalise the research process, there is a need to establish a conceptual basis on which key factors and their inter-relations can be anchored and investigated with logical correspondence. On the basis of the above discussion, a research framework is proposed in Figure 2.1. In this framework it is posited that the joint venture performance is a function of the inter-personal managerial relationships between the partners (other variables are also important and affect the performance, but they are not the focus of discussion in this research), and the managerial relationship is affected by inter-personal trust (which is dependent on the conditions leading to trust), styles of handling inter-personal conflict, perceived managerial competency and managerial role expectations. These factors are affected by the British and Chinese cultures and the joint venture context. In Figure 2.1, the variables described above are indicated by the boxes; the arrow lines are used to indicate the relationships between the variables.

It is suggested that these key issues are common to most of IJVs in all nations, but the ways of dealing with these are different in each (Banks and Waisfisz, 1994, p.70). Hence, going beyond what composes these issues, this research seeks to identify how

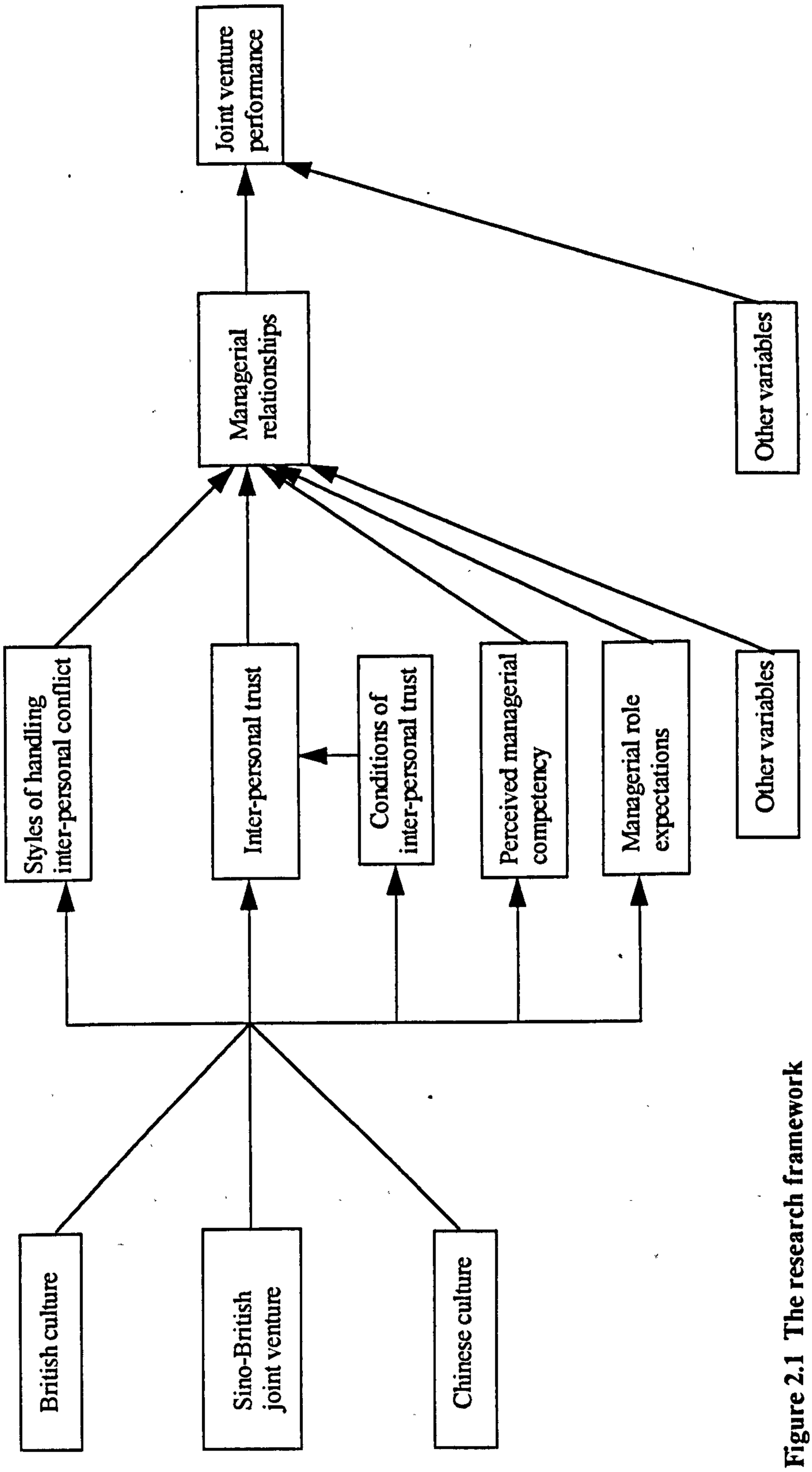

Figure 2.1 The research framework

the IJV partners behave and what are the differences with regard to such important dimensions in the Sino-British joint ventures. By this approach, an attempt was made to provide insights into such differences, which would help IJV partners to acquire "cultural competitive advantages" by identifying and reconciling such differences and reducing "relational costs" (Dunning, 1993) to gain mutual benefits from the co-operation.

The key issues indicated in the research framework may be associated in some way or the other with each other. Due to certain operational constraints encountered in the research process, the present study was limited to examining the properties of each of the factors as a stand-alone dimension and no attempts were made to investigate correlation effects between these dimensions. Neither does it intend to test the hypothetical causal relations between the four key factors and the working relationships as indicated in the framework. These causal relations are only proposed as a conceptual base and they will be examined in future research.

2.5 Key issues examined in the research

The conditions of trust, conflict solution, role expectation and perceptions of counterparts' managerial competency are included as the key issues in the research framework since they are closely correlated factors and play key roles in the working relationships of the IJVs (e.g., Sullivan, Peterson, Kameda and Shimada, 1981). So far little information is available about SBJVs with regard to the issues of trust, conflict solution, perceived managerial competency and role expectations. This research seeks to contribute to the understanding of these dimensions. Taking on this perspective opens the way to the understanding of deeper-level elements that underpin the key issues identified in the literature. For the present research, the work was carried out to identify:

1) the differences in rating the counterpart on the conditions of inter-personal trust, and the overall level of trust, between the British and Chinese managers in SBJVs.

2) the differences in styles of handling inter-personal conflict between the British and Chinese managers in SBJVs.

3) the differences in perceived managerial competency of the counterpart between the British and Chinese managers in SBJVs.

4) the perceptions of managerial roles of the counterpart between the British and Chinese managers in SBJVs.

With regard to the research orientation, studies (Parkhe, 1993; Buckley and Casson, 1996) have criticised the tendency to leave the assumptions implicit and derive propositions from a discursive literature review. With a wide range of received theories and models of IJVs from various perspectives, it must be made clear whether the focus is on the *choice* of IJVs as compared with other forms of market entry and co-operation, or the focus is on the *continuing relationships* between the partners of the IJVs that are already in operation. This is because each requires a different perspective and may lead to different focal issues to be examined. The present research addresses the crucial issues involved in the work relationships as they exist and are developing in the established SBJVs. Hence, the theoretical focus and perspective are taken on the *continuing relationships* between the British and Chinese partners, not on the *choice* of the IJV from various co-operative forms.

Another distinctive feature of the focus is that it has taken on a cross-cultural perspective. It is argued that research concepts and measuring instruments must be assessed for their cross-cultural equivalence before they can be applied to capture and measure research phenomena. The present research involves psychometric measurement of the conditions of trust and styles of handling inter-personal conflict between the British and Chinese managers in SBJVs. To ensure construct and measuring equivalence, a substantial amount of work in this research was devoted to testing the cross-cultural validity of the measuring instruments. Indeed, this is deemed as essential since the present work involves two cultures (British and Chinese), and the measuring instruments were only developed and validated in the American culture. For this reason the testing of cross-cultural validity of the measuring instruments is

not only an important part of the work, but also an integral part of the objectives in the present research.

Cultural differences often cause the actors in the partner relationship to misinterpret a partner's way of doing things as non-co-operative, because they use the wrong assumption that equates co-operative behaviour with one's own way of doing things (Hall, 1995) (i.e., self-reference criteria). The focus of the present research is to identify these differences in the hope of improving IJV managers' "cultural literacy" (Hall, 1995), i.e., gaining insight into the intention of the counterpart and learning to react appropriately. Each of these key issues is discussed with reference made to the literature in the following sections.

2.5.1 Conditions of inter-personal trust

Inter-personal trust is seen as a determining factor for achieving efficiency within complex systems of co-ordinated action between inter-dependent actors (McAllister, 1995; Pennings & Moiceshyn, 1987; Seabright, Leventhal, & Fichman, 1992). Numerous definitions of trust exist in the literature. For instance, Parkhe (1993) summarised eleven different forms of definitions of trust from fourteen researchers. Given such diverse inquiry into the topic, some common threads can be observed:

> "Trust involves a leap of faith into an uncertain future. It represents the deliberate undertaking of mutually interdependent relationships characterized by possible gains from cooperation, but also by potentially larger losses from defection. Thus, trust occurs in social interactions in which subjective, ex ante assignment of probability of nonexploitative behavior must be made to a party to whom one is vulnerable, if that party should violate expectations of cooperative behavior" (Parkhe, 1993, p.4).

To understand the concept from a more specific perspective, inter-personal trust can be seen as the degree to which a person is confident in, and willing to act on the basis of, the words, actions, and decisions of another (McAllister, 1995). There are a few features of inter-personal trust. First, it is based on the expectation that one will find what is expected rather than what is feared (Deutsch, 1973; ctd. in McAllister, 1995,

p.25). Second, at times an individual's trust in others can be centred more on how they make decisions that affect him or her than on how they behave (McAllister, 1995, p.25). Finally, trust encompasses not only people's beliefs about others, but also their willingness to use that knowledge as the basis for action (Luhmann, 1979, ctd. in McAllister, 1995, p.25).

The importance of trust to the co-operative relationships in IJVs is also emphasised by the "resources" viewpoint, which regards trust as a social capital. As a moral resource, trust operates in a fundamentally different manner than physical capital; trust increases with use, and can become depleted if not used (Hirschman, 1984; Putnam, 1993, ctd. in Powell, 1996, p.52).

Trust is one of the key issues in IJVs. An increasing number of studies of trust in international co-operative relations including IJVs have provided insights into this issue with a variety of views (e.g., Buckley and Casson, 1988, 1996; Deluga, 1994; Madhok, 1995a, 1995b; Parkhe, 1993; Sullivan and Peterson, 1982).

In situations that involve uncertainty and complexity of interaction between the inter-dependent actors, sustained effective co-ordinated action is only possible where there is mutual trust (McAllister, 1995; Powell, 1996, p.53). An IJV possesses several theoretically important properties: a) mutual inter-dependence (Zand, 1972); b) partial overlap of goals of the participating parties (Ouchi, 1980); and c) partial influence over the outcome of the IJV (Parkhe, 1993). With such uncertainty and partial impotence in the IJV relationship, the effective maintenance of the working relationship between the partners is affected by mutual forbearance and mutual insurance, which in turn are dependent upon mutual trust (Buckley and Casson, 1988, 1996). Hence trust emerges as a central organising principle in the study of IJV relationships (Parkhe, 1993). Empirical research has provided evidence that endorses the critical role of trust in facilitating partner relationships and success of IJVs (Cui Chi, 1993; Madhok, 1995a; Sullivan and Peterson, 1982).

While the concept of trust has considerable appeal, it is also exceedingly elusive (Gambetta, 1988). As Powell (1996) has noted, trust has been viewed in two ways: a rational or calculative view and a cultural or social norm view. In the former, trust is regarded as a rational outcome of an iterated chain of contacts in which farsighted parties recognise the potential benefits of their continued interaction. In the latter, trust is considered as a by-product of the embeddedness of individuals in a web of social relations such that values and expectations are commonly shared. These views have been criticised as inadequate in that:

> "social norm-based conceptions of trust miss the extent to which co-operation is buttressed by sustained contact, regular dialogue, and constant monitoring. ... the rational or calculative view of trust, which seems such an apt explanation for business groups or inter-firm alliances, overstates the extent to which the continued success of a relationship is based on the ability of parties to take a long-term view and practice mutual forbearance" (Powell, 1996, p.63).

Therefore, it is argued that, on the one hand, strong homophily in cultural values may not always produce high levels of trust; the key is that the social norms are reinforced through sustained communication between the actors in the interactive relations. On the other hand, motives are a poor guide to outcomes because the parties are learning by doing, in which common purposes, shared interests and reputation become entangled with friendship, past experience and future incentives.

In business relationships the key element is the very indefiniteness of what one party is counting on the other party to do. In short, trust is neither chosen nor embedded but is learned and reinforced through ongoing interaction and adaptations between the partners (Geyskens, Steenkamp, Scheer and Kumar, 1996; Powell, 1996). This is in line with Lewicki and Bunker's (1996) view that trust in working relationships should be viewed as a dynamic phenomenon that takes on a different character in the early, developing, and "mature" stages of the relationship.

Given the centrality of trust in the maintenance of inter-personal working relationships in IJVs, it becomes important to understand the main factors that affect the building of trust in the IJV working relationship. Although focusing on the outcomes of trust as

a construct could reflect its complexity, it would not be able to pinpoint specific causes of trust or mistrust; it is more important for managers to know what causes trust than to just understand the construct itself (Butler, 1991).

The advancement in the received studies of trust entails further in-depth research on identifying basic conditions that lead to trust in IJVs. To enhance IJV theory to the next higher phase requires that visible IJV outcomes be more tightly linked to invisible processes leading to those outcomes (Parkhe, 1993). To address this, this research attempts to take one step forward by examining the "invisible" micro-level of trust, i.e., the conditions that lead to the establishment of trust in the managerial relationships in British and Chinese culture in general, and in the Sino-British collaborations in particular.

The conditions of inter-personal trust

Trust can be divided into two sub-constructs: a) a global (attitudinal/affective) component and b) a specific (situational/cognitive) component (Driscoll, 1978; Scott, 1980). Butler (1991) noted that several studies of trust in organisations have found that it is the specific component, i.e., situational trust in specific others, but not global trust in generalised others, that tended to be related to organisational performance. Furthermore, in addition to its multidimensional nature as a construct, trust is also activated and sustained by a multidimensional set of antecedent conditions (i.e., the conditions of trust).

It is argued that although measuring the dimensions (or components) of trust could reflect the complexity of the construct, it would be unable to pinpoint specific causes of trust or mis-trust that needed attention in a given organisation or relationship (Butler, 1991). As Butler has noted, the literature on trust has converged on the belief that trust in a specific person is more relevant in terms of predicting outcomes than is the global attitude of trust in generalised others; and a useful approach to studying trust consists of defining and investigating a comprehensive a priori set of conditions (determinants) of trust in a specific person. Hence, this research focuses

on understanding and measuring the conditions (i.e., antecedents) that lead to trust in a specific manager in SBJVs. Since Butler's (1991) study reflects one of the most comprehensive analyses of the conditions of trust derived from the literature and validated through repeated tests in the America, this research was based on the dimensions of the conditions of trust identified in his study and the measuring instrument "Conditions of Trust Inventory (CTI)" was adopted as the preliminary scale to be tested.

In Butler's CTI instrument, ten constructs have been integrated from the literature as measures of the conditions of trust: availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, and receptivity. A brief definition of each construct is given in Table 2.1. These constructs are measured by multidimensional scales developed and validated in the American culture. The test results of the CTI from Butler's (1991) study suggests that the CTI instrument captures the multidimensionality of the constructs and the focus on specific others in both bilateral relationships and vertical dyads.

Table 2.1 Definitions of the conditions of inter-personal trust based on CTI

Construct of the Conditions of Trust	Definition
1. *Availability*	The extent that one is physically present or available when needed in a work relationship.
2. *Competence*	The technical and inter-personal skills that are required to fulfil the requirements of a job to an acceptable standard.
3. *Consistency*	The character of reliability, predictability, and good judgement.
4. *Discreetness*	Whether one tends to keep the information of inter-personal communication in confidence as is deemed necessary.
5. *Fairness*	Perception of being treated fairly by others.
6. *Integrity*	Being honest and truthful towards others.
7. *Loyalty*	The quality of having motives for protecting and making the target person look good.
8. *Openness*	One's tendency to freely share ideas and information with others.
9. *Promise fulfilment*	Tendency of keeping promises.
10. *Receptivity*	The character of readily taking ideas from others.

Source: Adapted from Butler (1991).

One difference between Butler's CTI and other trust instruments is that CTI focuses on the conditions leading to trust other than dimensions of the construct of trust. The importance of CTI lies in that managers have a greater need to know what causes trust than to understand the construct itself, and the CTI can assist them in diagnosing problems related to causes of trust (Butler, 1991). Another characteristic of CTI is that it focuses on the conditions of trust in a specific target person. It is argued that trust is a situational cognition developed from characteristics attributed to a specific other, rather than a global attitude of trustingness toward generalised others (Butler, 1991). Hence it is appropriate to use the CTI for investigating the managerial relationships in general and IJVs in particular.

To assess the conditions of trust in the context of cross-cultural collaboration in SBJVs, several hypotheses on the conditions of trust were developed based on the ten dimensions of the CTI. Details of the hypotheses are described in the next chapter.

2.5.2 Styles of handling inter-personal conflict

Conflict is closely related to trust in the relational interaction. Sustained interaction in a relationship may create scope for conflict (Buckley and Casson, 1988); when scope for conflict is high, a greater input of trust is required to reduce the probability of opportunism and enhance the value of the relationship (Madhok, 1995a). Studies of trust have found that variables that are related to trust include preferred conflict handling mode (Thomas, 1976). In particular, the way by which conflict is handled by the joint venture partners directly affects the level of mutual trust (Sullivan, Peterson, Kameda, and Shimada, 1981). In fact, conflict is so pervasive in IJVs that some researchers chose the joint venture as a typical context in which conflict measures were tested (Sullivan, Peterson, Kameda, and Shimada, 1981).

Conflict is defined as a form of interaction among parties that differ in interests, perceptions, and preferences, which may be overt ranging from mild disagreements through various degrees of fighting, or may no show up with parties with substantial differences acting as if those differences did not exist (Brown, 1991). It is regarded as

a dynamic process consisting of latent, perceived, affective, manifest, and aftermath stages (Pondy, 1967).

IJVs are characterised by the potential of conflicts between the partners evolving from differences in goals, expectations, approaches to managing the business and other factors. Managers of IJVs may have different attitudes toward time, the importance of job performance, material wealth, and the desirability of change (Killing, 1982). Because of the double parenting nature of the IJV, managers are typically working with ambiguous frames of reference and criteria. As a result, they often face a "double bind" situation, in which conflicting messages occur while it is vitally important to discern what message is being communicated, but the individual is unable to comment upon the ambiguity (Hennestad, 1990).

Studies of conflict have noted the positive consequences of conflict (e.g., Rahim, 1985). It is argued that moderate levels of conflict may be tolerable since they allow differences to be recognised and extensively argued, which often results in high degrees of information exchange and better decisions (Brown, 1991; Robbins, 1974). Therefore, it is more important to manage conflict than preventing it from emerging, or reducing and eliminating it in organisations (Rahim, 1985). As Brown (1983) has argued, "conflict management can require intervention to reduce conflict if there is too much, or intervention to promote conflict if there is too little".

The literature on the management of conflict has exhibited two directions. The first approach measures the amount of conflict at various organisational levels and the sources of such conflict. The second focuses on relating the various styles of handling inter-personal conflict of the organisational participants and their effects on quality of problem solution or attainment of social system objectives (Rahim, 1985). For the present research the focus is on the differences in styles of handling inter-personal conflict between IJV managers from different cultures, since they are considered closely related to the social dimensions of the IJVs and the maintenance of the partner relationships at the inter-personal relationship level, and research has found managing

person-related conflicts to be the more demanding task (Tse, Francis and Walls, 1994).

Styles of handling inter-personal conflict

Research has provided evidence that conflict resolution is related to indicators of partnership success (Mohr and Spekman, 1994). Conflict often exists in IJVs as a consequence of factors such as inherent inter-dependencies between IJV parties, mismatch and mis-expectation of goals of different parties, incompatible models of management, ambiguities and mis-expectation of roles of IJV executives, ethnocentrism and cross-cultural differences. Given the different sources of conflict at a conceptual level, most conflict manifests itself in working relations at an inter-personal level. From the literature review (e.g., Rahim and Magner, 1995) styles of handling conflict proposed in different studies include the following:

1. Two styles: co-operation and competition;
2. Three styles: non-confrontation, solution-orientation, and control;
3. Four styles: yielding, problem solving, inaction, and contending;
4. Five styles: integrating, obliging, dominating, avoiding, and compromising.

(See Rahim and Magner 1995 for a wider discussion.)

In working relationships, there are various styles of behaviour in handling inter-personal conflict depending upon the situation (Rahim, 1985). Following the conceptualisation in the literature (e.g., Blake and Mouton, 1964; Thomas, 1976), Rahim (1983a, 1985) differentiated the styles of handling conflict on two basic dimensions: concern for self and for others. The former explains the degree (high or low) to which a person attempts to satisfy his or her own concern in dealing with conflicts. The latter indicates the degree (high or low) to which a person wants to satisfy the concern of others. These dimensions reflect the motivational orientations of a given individual during conflict (Rubin and Brown, 1975), and they are supported by empirical studies (Ruble and Thomas, 1976; Van de Vliert and Kabanoff, 1990). Combining the two dimensions, Rahim (1983a) integrated five specific styles of

handling conflict into a model shown in Figure 2.2. Following the recent studies (Rahim, 1985; Rahim and Magner, 1995), the definitions of these five styles are summarised in Table 2.2.

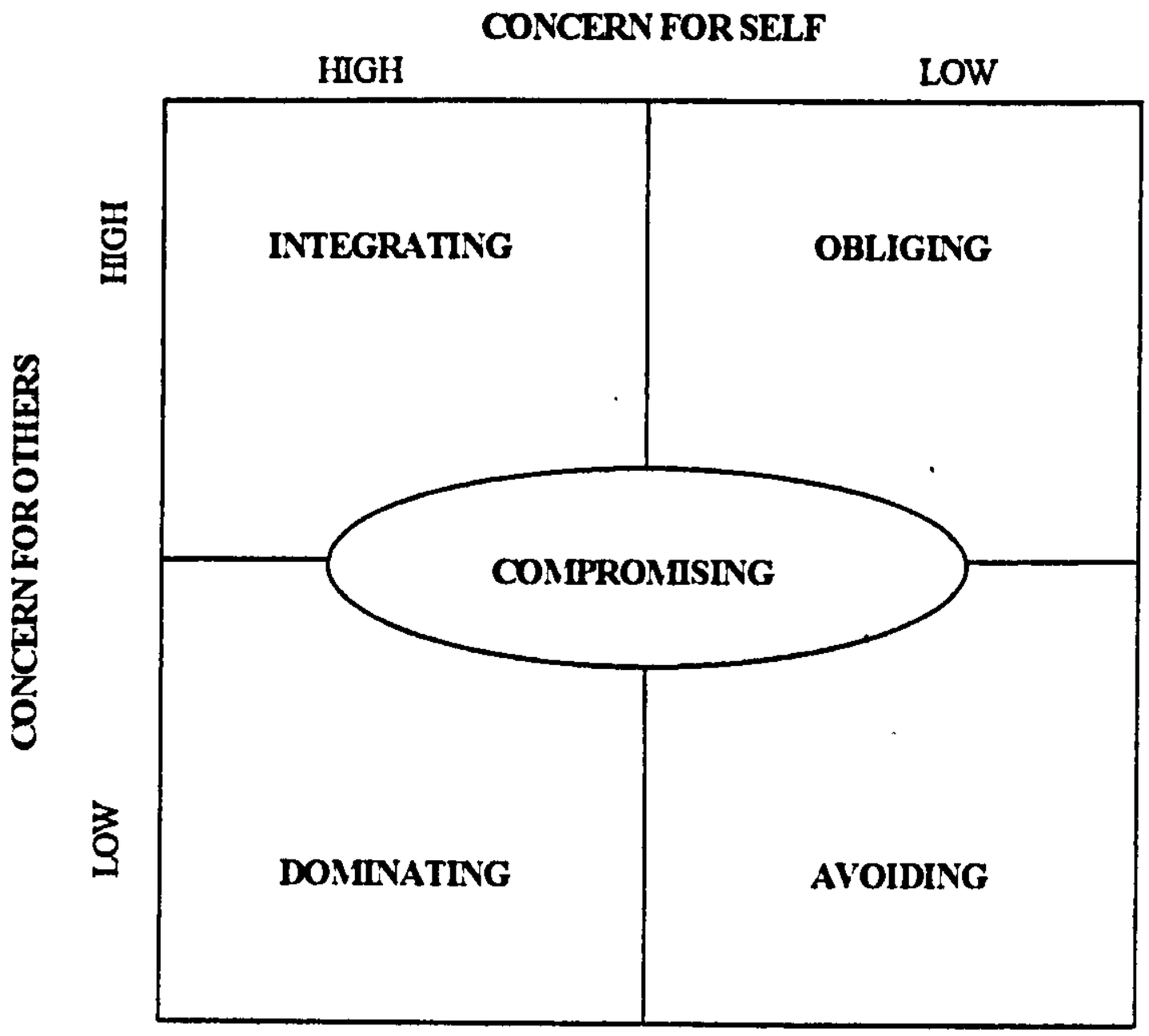

Figure 2.2 The ROCI-II two-dimensional model of the styles of handling interpersonal conflict
(Source: Adopted from Rahim, 1983a.)

Table 2.2 The five styles of handling inter-personal conflict

Styles	Definition
1. *Integrating*	High concern for self and others; involving openness, exchange of information, and examination of differences to reach an effective solution acceptable to both parties.
2. *Obliging*	Low concern for self and high concern for others; associated with attempting to play down the differences and emphasising commonalties and neglecting own concern to satisfy the concern of the other party.
3. *Dominating*	High concern for self and low concern for others, with win-lose orientation or forcing behaviour to win one's position.
4. *Avoiding*	Low concern for self and others; associated with withdrawal, passing-the-buck-passing, or side-stepping.
5. *Compromising*	Intermediate in concern for self and other; involving give-and-take whereby both parties give up something to make a mutually acceptable decision.

Source: Based on Rahim (1985) and Rahim and Magner (1995).

These five styles have been integrated into the Rahim Organisational Conflict Inventory - II (ROCI-II) (Rahim, 1983b) for measuring the self-report of the styles of handling conflict of an organisational member with superiors, subordinates and peers. A recent study by Rahim and Magner (1995) using confirmatory factor analysis (CFA) has provided evidence that the ROCI-II based on the five-style model has a better fit with the data than models of two to four factors. The study has provided evidence of both the convergent and discriminant validities of the ROCI-II in diverse samples, and evidence of these validities together with the evidence reported in other field and experimental studies (Lee, 1990; Levy, 1989; Psenicka and Rahim, 1989; Ting-Toomey, Gao, Trubisky, Yang, Kim, Lin, and Nishida, 1991) provide support for the construct validity of the instrument. The results also provide general support for factor invariance across the three levels of superiors, subordinates, and peers in organisations.

Studies in conflict management have identified the significance of cultural variability in terms of collectivism/individualism and high versus low context. Collectivism

emphasises group harmony and inter-dependence, whereas individualism emphasises individual rights and independence (e.g., Tse, Francis and Walls, 1994). In a high context culture most of the information is communicated in the physical context or internalised in the person and very little is in the coded, explicit and transmitted part of the message, whereas in a low context culture, communication of information is vested in the explicitly coded message (e.g., Hall, 1976). Received studies on conflict in organisations have shown that home culture orientation affects executives' responses to conflicts (Elsayed-Ekhouly and Buda, 1996; Tse, Francis and Walls, 1994).

Because Britain is an individualistic and low context culture (e.g., Gudykunst, Gao and Franklyn-Stokes, 1996) and China is a collectivist and high context culture (e.g., Ho, 1976; Li, 1978; Tse, Francis and Walls, 1994), it is conjectured that British and Chinese managers will use different communication styles, and their behavioural characteristics in dealing with inter-personal conflict will be quite different. For instance, it is expected that British managers will use a direct, sender-oriented, informal and personal communication with assertiveness style, and Chinese managers will favour an indirect, formal and process-oriented approach with certain reliance on non-verbal languages.

Studies on "self-monitoring" have provided some evidence. "Self-monitoring" describes behavioural characteristics in terms of self-observations and self-control guided by situational cues to social appropriateness, and the ability to modify self-presentations and to the sensitivity to the expressive behaviour of others (Snyger, 1974; Lennox and Wolfe, 1984, ctd. in Gudykunst, Gao and Franklyn-Stokes, 1996). It is argued that people in collectivist cultures must take the group/status relationships to others in the situation into consideration when deciding how to behave. Gudykunst, Gao and Franklyn-Stokes (1996) have found that British people show greater ability to modify their self-presentations, tendency to avoid public performances, and sensitivity to others' expressive behaviour than Chinese people. The Chinese show that they paid more attention to social comparison information and to others' status characteristics than the British. It appears that people in

individualistic cultures (e.g., Britain) have greater ability to modify their self-presentations and greater sensitivity to others' expressive behaviour than people in collectivist cultures (e.g., China). In terms of paying attention to others' behaviour, no significant differences were observed between the Chinese and the British. It is suggested that members of individualistic cultures appear to focus on how they can change their behaviour to meet generalised expectations of others in a social situation; members of collectivist cultures, in contrast, appear to focus on how they can behave appropriately given their relationship to specific people in a social situation.

Some received studies have reported characteristics of British and Chinese in handling conflict in separate research contexts. For instance, Tang and Kirkbride (1986) found that Chinese tended to be more avoiding and compromising, whereas British appeared to exhibit a rather competitive style. Leung (1988) found that Chinese opted for non-confrontational approaches to conflict resolution to a greater extent than did their Western counterparts. Jehn and Weldon's (1992) study found that Chinese managers choose more accommodating styles. It was found that members of individualistic cultures are more direct, competitive, aggressive and solution-oriented when dealing with disputes compared to members of collectivist societies (Leung and Lind, 1986; Ting-Toomey, Trubisky and Nishida, 1989). Wofson and Norden (1984) found that Chinese subjects tended to use passive strategies more than North American subjects. Westwood, Tang and Kirkbride (1992) found that Chinese managers favoured the less assertive "compromising" and "avoiding" styles, whereas British managers exhibited an inclination towards the more assertive "collaborating" and "competing" styles.

However, most of these studies were based on samples taken from either executives outside P.R. China (e.g., Hong Kong and Singapore) or university students or schoolchildren (e.g., Chiu and Kosinski, Jr, 1994; Tang and Kirkbride, 1986; Westwood, Tang and Kirkbride, 1992), except Tse, Francis and Wall's (1994) study of Chinese executives on study in Canada. In the conflict literature, no empirical evidence has been found from direct comparison of conflict management styles between British business managers in the UK organisations and Chinese business managers in the P.R.C. organisations. Furthermore, no direct comparison has been

found on styles of handling inter-personal conflict between British and Chinese managers in SBJVs. It is argued that individuals' behaviour patterns respond to the rules considered as appropriate by the specific social setting and situation (Chiu and Kosinski, Jr., 1994). Given their differences in cultural orientations and "self-monitoring" characteristics, it is speculated that the British and Chinese managers exhibit different conflict management styles which are conditional on the nature of interaction (i.e., intra-cultural versus cross-cultural) and characteristics of organisational mechanism (i.e., a home-country organisation versus a SBJV).

For the above reasons, ROCI-II has been adopted in this research as the measuring scale for examining styles of handling inter-personal conflict between the British and Chinese managers in general, and in SBJVs in particular. On the basis of the five dimensions of ROCI-II, hypotheses were developed and are discussed in the next chapter.

2.5.3 Managerial competency

Abilities are seen as one of the factors that affect one's perceptions of and responses to role stressors (i.e., role conflict and ambiguity) (Schuler, 1980). It is posited that the perceived managerial competency may contribute to the overall level of trust, as suggested in Figure 2.1. As noted in the psychology literature (e.g., Argyle, 1994), the way in which a person perceives and interprets events affects how the person will behave. Since observers also make attributions about the causes of another's behaviour, faulty person perception can result in inadequate social performance (Argyle, 1994).

Studies of IJVs on China have reported that many Western managers complain about Chinese managers' lack of management experience (e.g., Brunner, Koh and Lou, 1992). Although Chinese managers are generally eager to learn management skills, there are complaints about Western managers' lack of local knowledge and compatibility with the Chinese managers (Li and Xu, 1994). The issues of how the Western and Chinese managers perceive each other on their capability and styles of

management have become very important for improving their understanding of each other and achieving compatible interaction in the management of the joint ventures.

It was found in the pilot interviews of the present research that the British and Chines managers in the Sino-British joint ventures exhibited insatiable curiosity for their partners' perception of their own managerial competencies. This may be partly due to the fact that when coming face to face, the British and Chinese managers in a SBJV tend not to pinpoint each other's managerial weaknesses because both Western and Chinese managers are aware of the importance of face maintenance (although this is thought to be more important in the Chinese culture). An investigation into issue of managerial competnecy was included into the present research in the hope to provide a "mirror" for the British and Chinese managers with regard to how they were perceived by their counterparts as a good manager.

One difficulty is to select the appropriate measuring scale of the managerial competency. In the literature several studies addressed this issue from different perspectives, resulting in different measuring scales. For instance, Baird, Lyles, Ji and Wharton (1991) used fifteen measuring items to describe the perceptions of the "ideal joint venture manager" between American and Chinese managers. However, in their study the concept of the IJV manager was described as the supervisor. This restricted its applicability in the present research since, from the present study's point of view, the relationship between the British (and other Western) and Chinese managers are more complicated than a supervisor-subordinate relationship because of their connections with their own parent firms and their concurrent roles (e.g., one as both the chairman and the deputy general manager while another as the general manager and a director) in the joint venture.

In another study, Vertinsky, Tse, Wehrung and Lee (1990) factor-analysed a 24-item scale to measure the attributes of management styles by pooling the samples from the People's Republic of China, Hong Kong and Canada. In the present study's viewpoint, this approach of pooling categorically different samples is questionable, particularly since the factoring results were not tested for their cross-cultural validity

(see chapter 5 for an elaborate discussion about the methodological issues in factor analyses).

In a study of British and Swedish management styles, Brewster, Lundmark, and Holden's (1993) used a 21-item measurement instrument to describe the most important characteristics for the management styles. In their study the measurement instrument was treated as an aggregate measurement of "a good manager" and each item was used as a unidimensional measurement of a competence characteristic. Such single-item measurement has certain limitations. However, from a practical viewpoint, it has the advantage to capture the salient characteristics of a competent manager in a general sense and provide an easy-to-understand bench mark for managers. Hence, these items were considered appropriate to measure the managerial competency for the present research. The twenty-one characteristics of the managerial competency are described in Table 2.3.

In this research since the substantial parts of the work were devoted to the investigation of conditions of inter-personal trust and styles of handling inter-personal conflict, the investigation of the managerial competency was limited to an exploratory analysis. Therefore, no attempt was made to factor-analyse these items. The twenty-one characteristics were used as single item scales to measure the perceived managerial competency by the British and Chinese managers of each other. As an exploratory approach, each item was regarded as a salient property instead of a latent construct, so that the bias from validity can be minimised. It is argued that, by using the measuring scale in the single-item form, the results can be presented explicitly for the British and Chinese managers to understand how they are perceived by their counterparts in terms of each of the specific characteristics. To identify whether the British and Chinese managers see their counterparts differently, the analysis was based on hypothesis testing of mean differences, and the hypotheses are described in the next chapter.

Table 2.3 Characteristics of managerial competency

1. Is able to make quick decisions
2. Accepts new ideas
3. Has careful preparation before a decision
4. Has clarity of purpose
5. Creates a climate characterised by trust
6. Encourages visions
7. Creates order and structure
8. Is flexible
9. Fully informs staff of decisions
10. Gives continuous feedback of results
11. Gives responsibility to staff members
12. Handles conflicts openly
13. Has a sense of humour
14. Is honest in communication
15. Is a careful planner
16. Is cautious in action
17. Lets the staff member participate in decisions
18. Makes sure plans and rules are followed
19. Stimulates discussion among staff members
20. Stimulates individual achievement
21. Shows strong dedication to work

Source: Adapted from Brewster, Lundmark and Holden (1993).

2.5.4 Role expectation

In business relationships the key element is the very indefiniteness of what one party is counting on the other party to do (Powell, 1996). Research has found that roles[5] in organisations are rarely fixed (Graen, 1976), and most employees have an understanding of their obligation that differs substantially from their employer's understanding (Rousseau, 1989). In role theory this phenomenon has been conceptualised as role conflict and role ambiguity. Role conflict is typically seen as a perception of incompatible expectations sent to a focal person, and role ambiguity

[5] In the literature the concept of role has a diversity of definition (Biddle and Thomas 1966; Biddle, 1979). In this study a role is defined as the typical behaviours that characterise one or more persons in a social context (Biddle, 1979). In organisations many roles are assigned by an individual's position and are generally prescribed in the person's job description or other forms. The person playing the role is referred to as the role incumbent (Greenberg and Baron, 1993; Pollard and Liebeck, 1994).

refers to a focal's lack of clarity about sent roles (Kahn, Wolfe, Quinn, Snoek, and Rosenthal, 1964; Dougherty and Pritchard, 1985).

The lack of specificity in IJVs (Buckley and Casson, 1996) is partly reflected in the indefiniteness of the roles that individual managers are expected to play in the managerial relationships (e.g., Schaan and Beamish, 1988). Similar to the social roles that can be created by the situation (Argyle, 1994), some of the expected managerial roles in the IJV may result from work requirement, but the incumbent for certain roles may be perceived differently. Role deviance is one of the sources of conflictual behaviour (Habib, 1987). Role senders (i.e., people holding expectations about a manager's role behaviour) can create conflicting expectations by communicating incompatible or difficult-to-prioritise requirements (Peterson, Smith, Akande, Ayestaran, Bochner, Callan, Cho, Jesuino, D'Amorim, Francois, Hofmann, Koopman, Leung, Lim, Mortazavi, Munene, Radford, Ropo, Savage, Setiadi, Sinha, Sorenson, and Viedge, 1995). Managers in IJVs are typically facing different expectations from the two parent companies, which often lead to role ambiguity and conflict. As Killing (1983) has noted, the IJV manager has to devise a means of creating a working relationship with two or more parents who have vague and possibly conflicting objectives. This situation is difficult to resolve because two parent firms give the manager conflicting instructions, or the IJV board urges him to show one kind of behaviour but the parent who has assigned him the post tends to reward another.

Studies have provided strong evidence to suggest that employees holding the same formal job differ in how broadly they define that job, or in terms of where they draw the line between in-role and extra-role behaviour; which is defined as perceived job breadth (Morrison, 1994). In the theory of organisational citizenship behaviour (OCB), jobs are socially constructed rather than objectively defined; they are in part cognitive constructions subject to a variety of social cues, hence there is divergence in perceived responsibilities between the members of the organisation (Morrison, 1994).

Social cues can be indicated by structural equivalence (the extent to which actors in a social network interact with the same subset of others, see Knoke and Kuklinski,

1982). On the basis of structural equivalence, Morrison (1994) has found that employees will define their job responsibilities similarly to the extent that they are structurally equivalent; the more frequently an employee and a supervisor interact, the more similar they will define the employee's job responsibilities.

However, in IJVs the structural equivalence is often difficult to define because the managers in IJVs most often have double identities - the job in the parent company and the job in the IJV. This suggests that in IJVs the sources of role indefiniteness are more complicated than other organisations. For instance, in many joint ventures in China, one person may work as both the president of the board of directors and the general manager, or a deputy general manager may also took the role of the chairman of the trade union (e.g., Wang, 1992).

For the above reasons, this research attempted to examine the role perceptions in the Sino-British joint ventures. Since the substantial parts of the research are devoted to the investigation of conditions of inter-personal trust and styles of handling inter-personal conflict, the investigation on the role perceptions was limited to an exploratory analysis. Nyaw (1993) has identified a set of typical responsibilities with joint ventures in China. They were adopted with modification to set up measuring scales (see Table 2.4) and used in a pilot survey. The analyses are provided in Chapter 5.

2.6 Conclusion

The ever-increasing interest in IJVs from practitioners and academics has resulted in extensive studies in this area. Researchers have advanced the theories and established foundations from a wide scope of perspectives based on contract-centred approaches (e.g., transaction cost, strategic-behaviour, and organisational-behaviour), relational-centred approaches (e.g., focusing on social dynamics and "personal chemistry") and other various approaches.

Table 2.4 Typical managerial responsibilities in joint ventures in China

Typical managerial responsibilities
1. to develop the joint venture's long-term objectives;
2. to develop the joint venture's short-term objectives;
3. to formulate the strategy to achieve the joint venture's objectives;
4. to supervise the implementation of the strategic plan;
5. to appoint shop floor managers;
6. to appoint divisional managers;
7. to readjust the organisation structure to meet operational needs;
8. to arbitrate in conflicts between departments or personnel;
9. to assess divisional managers' performance;
10. to assess shop floor managers' performance;
11. to assess non-managerial staffs' performance;
12. to plan the major financial plan;
13. to liaise with the government;
14. to liaise with the Chinese parent companies;
15. to liaise with the British parent companies;
16. to liaise with financial institutions;
17. to liaise with customers;
18. to liaise with suppliers
19. to monitor the establishment of an effective control system;
20. to plan, implement and control the overall development of the JV.

Source: Based on Nyaw (1993) with modifications.

This chapter has reviewed the major streams of the received theories of IJVs. Building upon the received theories of IJVs as well as responding to the criticisms in the literature, the research has taken a different approach that focuses on the core issues of IJVs at the micro, inter-personal relationships level. The core issues under the study include 1) the conditions of inter-personal trust, 2) styles of handling inter-personal conflict, 3) perceived managerial competency, and 4) the role expectations.

For the purpose of this research, a research framework was proposed to assist the analyses of each of the core issues. It is suggested that in SBJVs, inter-personal trust between the British and Chinese managers may result from the ten factors of availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, and receptivity, as measured by the CTI instrument. In handling inter-personal conflict in the work relationship, the British and Chinese managers may use different styles characterised by the five dimensions of integrating, obliging, dominating, avoiding and compromising, as measured by the ROCI-II instrument. The perceived managerial competency is indicated by the twenty-one characteristics. These first three core issues were examined by hypotheses tests. The fourth issue of managerial role expectations was explored using interviews in the pilot survey. The hypotheses, methodologies, full analyses and discussions are presented in the following chapters.

CHAPTER 3 RESEARCH HYPOTHESES

3.1 Introduction

This chapter discusses the research hypotheses that have been formulated to examine the key issues concerning the managerial relationships in SBJVs. The chapter is divided into two main parts. Section 3.2 considers the concept of hypothesis testing and its connection with the present research. Section 3.3 discusses the research hypotheses. On the basis of the research framework developed in the previous chapter, the discussion is divided into three sub-sections, namely conditions of inter-personal trust, styles of handling inter-personal conflicts, and perceived counterpart's managerial competency in SBJVs.

3.2 Hypotheses development

A hypothesis is a logically conjectured relationship between some parameters (i.e., constructs or variables) expressed in the form of testable statements, which is developed by a researcher through logical reasoning based on the network of associations in the theoretical framework. It includes hypothesised relations both among constructs and between constructs and observable indicators or variables that are associated with each construct (Judd, Smith and Kidder, 1991; Sekaran, 1992), as is show in Figure 3.1. The hypotheses formulated for this research will take either of the types as appropriate.

In statistical terms, hypothesis testing is a procedure by which, on the basis of sample data, an explicit set of rules are applied to determine whether to not reject the null hypothesis or to reject it in favour of the alternative hypothesis (Anderson, Sweeney, and Williams, 1993, p.328; Freund, 1992, p.427). In the social sciences, hypothesis testing provides a scientific tool for explanation or prediction about social phenomenon (Buckley, 1994; Judd, Smith and Kidder, 1991). Three types of situation exist for the formulation of hypotheses: i) testing research hypotheses, ii)

testing the validity of a claim, and iii) testing decision making situations (Anderson, Sweeney and Williams, 1993).). It is the first type of hypothesis testing which this research is concerned with.

Type 1 hypothesis: relations among constructs.

Construct A — causes / leads to / produces / is associated with / etc. — construct B for population X in condition Y

E.g.: "Contact with members of other ethnic groups decreases prejudice when in equal-status settings."

Type 2 hypotheses: relations between constructs and observable indicators or variables.

Behaviour X or response Y is a valid indicator of construct A.

E.g.: "Ideologues are those who explicitly refer to underlying ideologies in discussing political issues".

Note: In any given hypothesis, some parts (e.g., the populations or conditions) for which the relationship between construct A and construct B holds may not be explicitly mentioned.

Figure 3.1 Types of hypotheses
(Source: Adapted from Judd, Smith and Kidder, 1991.)

In this type of testing, the research hypothesis is formulated as the alternative hypothesis, while the null hypothesis is based on an established theory or the statement that the research treatment will have no effect (Anderson, Sweeney and Williams, 1993). In other words, the null hypothesis is to be framed in such a way that it can be tested for possible rejection, which leads to the acceptance of the relationship or condition that the research intends to verify (Churchill, 1995; Sekaran, 1992). Due to the absence of perfect information in research (such as in sampling), errors may occur in that a true null hypothesis is rejected (Type I error), or a false null hypothesis is not rejected (Type II error). The probability of making a Type I error is specified by α (the *significance level*), and the probability of making a Type II error is denoted by β ($1-\beta$ is called the *power*). A good test is regarded as one in which both α and β are small, thereby giving a good chance of making the correct decision (Freund, 1992, p.431).

However, there is a trade-off between the two because of the inverse relationship between α and β, i.e., if the probability of one type of error is reduced, that of the other type of error is increased. The only way in which the probabilities of both types of errors can be reduced is to increase the size of the sample. But when the sample size is held fixed, the inverse relationship between α and β entails a typical statistical decision.

According to the classical (Neyman-Pearson) theory of hypothesis testing, the dependence between probabilities of type I and type II errors is circumvented by limiting ourselves to test statistics for which the probability of a type I error is less than or equal to some constant α (Freund, 1992, p.431). For practical purposes, by controlling a low value for the significance level (e.g., $\alpha \leq 0.05$ or 0.01), we have a high degree of confidence that the conclusion to reject the null hypothesis is correct. Therefore, if the sample data contradict the null hypothesis and hence the evidence leads to the rejection of the null hypothesis, we would be able to "accept" the alternative, i.e., research hypothesis, since such a result would have been unlikely to occur if the null was indeed true (Anderson, Sweeney and Williams, 1993; Churchill,

1995; Newbold, 1991). Accordingly, the hypotheses in the following sections are stated in the null form.

A hypothesis can test both the relationship among variables and whether there are differences between groups with respect to any variables. Furthermore, a hypothesis can be stated as either "directional" or "non-directional". Directional hypotheses indicate the direction (positive/negative) of the relationship between the variables, or postulate the nature of the difference (more than/less than) between groups on a variable. Non-directional hypotheses postulate a relationship or difference but offer no indication of the direction of the relationship or difference. In other words, given the conjectured significant relationship between two variables, we may not be able to state whether the relationship would be positive or negative; or given the conjectured differences between two groups on a particular variable, we will not be able to state which group will be more and which less on that variable. Non-directional hypotheses are formulated when either there is no basis for indicating the direction because the relationships or differences have not been previously explored, or there have been conflicting findings about the relationships on the variables in previous studies (Sekaran, 1992). The test type and directional form of the hypotheses in this study have been chosen as appropriate depending on the specific issues.

3.3 The research hypotheses

The hypotheses to be tested in this research are related to three of the four key issues[1] in the research framework discussed in the last chapter (see Figure 2.1 on page 38):

1) the conditions of inter-personal trust;
2) the styles of handling inter-personal conflicts;
3) the perceived counterpart's managerial competency.

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[1] The last issue, i.e., managerial role expectations, was examined by qualitative analyses, hence was not included in the hypothesis testing.

The overall relationships between these issues and the related constructs are incorporated in the research framework. In general, it is hypothesised that the cultural origins (i.e., British and Chinese) and the SBJV context have their effects on the conditions of inter-personal trust, the styles of handling inter-personal conflict, and the perceived counterpart's managerial competency. All the key factors affect the managerial relationship, which is one of the important factors in the performance of SBJVs. As explained before, the actual managerial relationships and the performance of the joint ventures were not examined in the present research. The focus of the research was on examining in detail how the cultures and joint venture context influence the four key issues. These key issues are indicated by the dotted line in the research framework as represented in Figure 3.2. The hypotheses discussed in the following sub-sections are concerned with the key issues in Figure 3.2 except the issue of managerial role expectations which was examined by a descriptive approach.

As a result of financial and time constraints imposed on this study, it does not seek to develop the measurement scales for the variables and constructs. The measurement scales used in the hypothesis testing were adopted from the literature, which will be described in detail in the following sections.

Hypotheses have to be testable with available methods in any research. The methodology and research design employed in this study will be discussed in Chapter 5. For the purpose of this chapter, it is necessary to note that the generation of hypotheses were based on a comparative perspective corresponding to cross-sectional and contrasted groups designs (also known as static-group comparison design) (Frankfort-Nachmias and Nachmias, 1996, p.129; Judd, Smith and Kidder, 1991, p.105), i.e., to examine the properties of the constructs by comparison between the British and Chinese cultures, and then in the SBJV context. Hence, the hypotheses were formulated for two types of comparison: mono-cultural and cross-cultural comparison. Mono-cultural comparison was made between the British

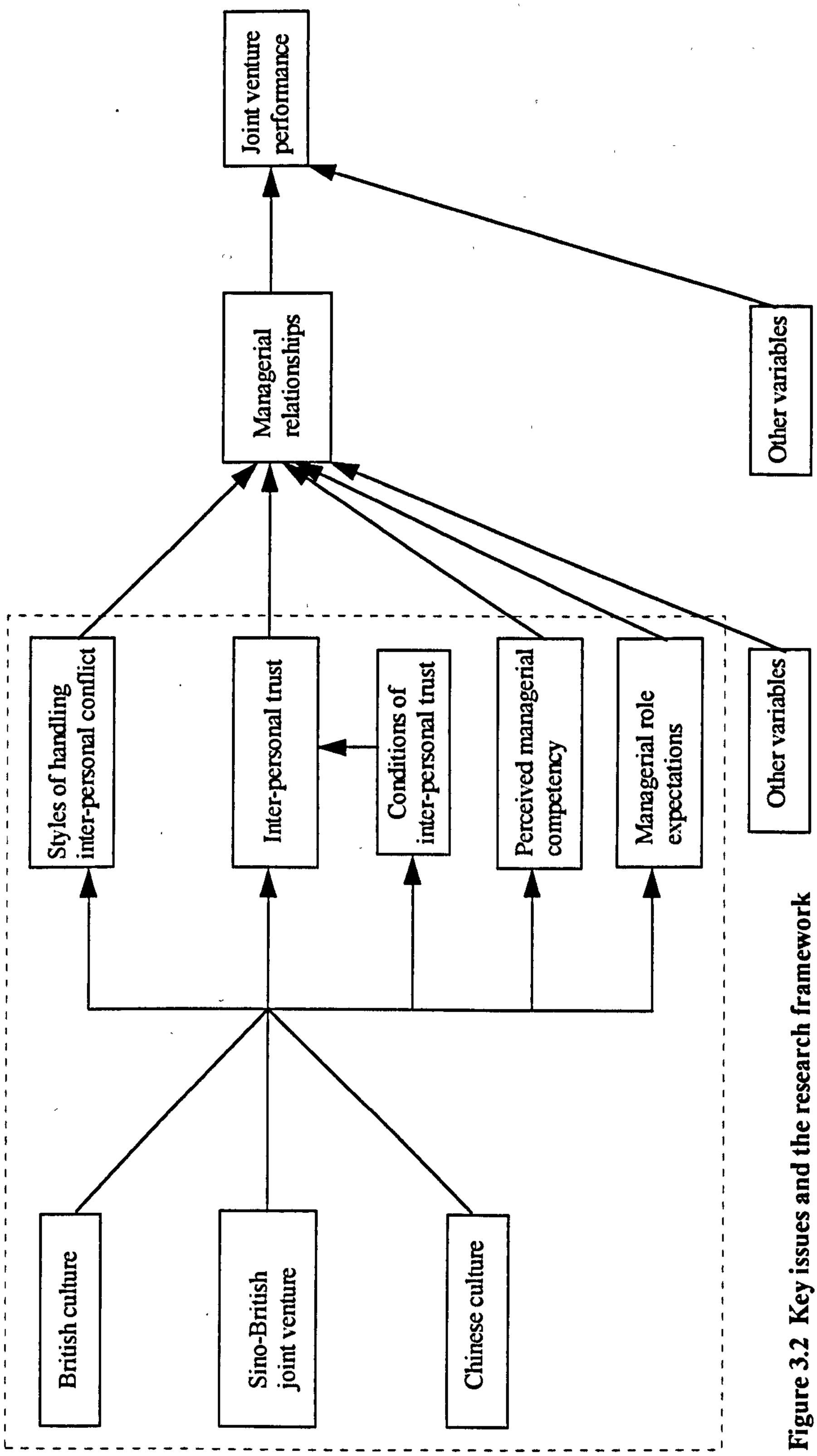

Figure 3.2 Key issues and the research framework

managers without involvement in SBJVs (Group BM) and those with involvement in SBJVs (Group BMjv), and between the Chinese managers without involvement SBJVs (Group CM) and those with involvement in SBJVs (Group CMjv). Then cross-cultural comparison was made between the British and Chinese managers without involvement in SBJVs (Group BM and Group CM), and between the British and Chinese managers with involvement in SBJVs (Group BMjv and Group CMjv). This comparative approach is indicated in Figure 3.3. More details of the research design and the methods of comparison are provided in the next chapter on research methodology.

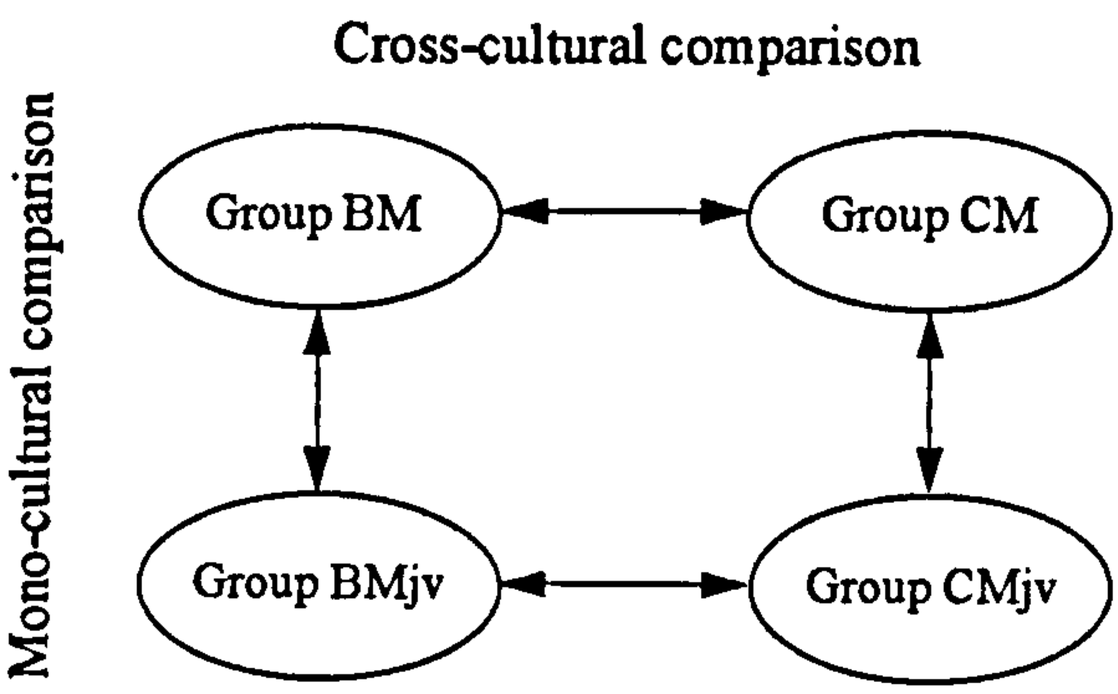

Figure 3.3 A contrasted-group comparative approach

3.3.1 Conditions of inter-personal trust

As a key factor in the inter-firm relational maintenance, trust includes a set of expectations between the partners with regard to each other's behaviour and each partner's fulfilment of its perceived obligations in light of such anticipation (Aulakh, Kotabe and Sahay, 1996). For the operationalisation of examining hypothesised relations, measurable variables need to be specified that capture the constructs and their inter-relations. On the basis of a comprehensive literature review and repeated validation testing, Butler (1991) has extended and validated a list of conditions leading to trust, namely the CTI. They include ten factors: availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, and receptivity (see Chapter 2 for details). The CTI instrument was adopted for examining what conditions lead to trust between the British and Chinese managers in each other. Studies on trust (e.g., Brewer, 1986; Sullivan, Peterson, Kameda and Shimada, 1981) have also suggested that trust may also be affected by the extent of need for trust. Although not originally included in CTI, a four-item measurement of need for trust was proposed and included in the present study for the exploratory purpose. Hence, hypotheses were developed based on these eleven dimensions. For simplilicy, all these dimensions are referred as CTI.

Availability. Availability refers to the extent that one is physically present or available when needed in a work relationship. The management of IJVs involves issues being perceived and dealt with by managers with different values, cultures, management styles and individual work agendas. It is hypothesised that adequate and direct personal communication is a necessary condition for building sustained trust between expatriate and local executives of the venture.

Competence. Competence refers to the technical and inter-personal skills that are required to fulfil the requirements of a job to an acceptable standard. This is deemed as a necessary elements for one to be trusted in a work environment. Strictly speaking, technical and inter-personal skills may not be mutually inclusive in a specific

person. In Butler's measurement scale of conditions of trust (CTI), however, both were included in the same item of measurement and proved to be valid measurement. To maintain consistency in measurement and for the purpose of comparison with previous studies (e.g., Butler, 1991), they are still placed in the same dimension in this research.

Consistency. Consistency refers to the character of reliability, predictability, and good judgement. It is hypothesised that uncertainty about one's behaviour will be reduced and trust will be established if one's behaviour is perceived as reliable, predictable, and demonstrates good judgement on information.

Discreetness. This factor is associated with whether one tends to keep the information of inter-personal communication in confidence as is deemed necessary. In the IJV context, managers work as inter-organisational boundary spanners. This function requires managers to be flexible and diplomatic in order to sustain good working relationships with the partners. It can be assumed that given the obligation to the parent companies, IJV managers may be compelled to exchange information to the extent that both of them perceive such exchange as necessary for enhancing mutual understanding and achieving compromise in solutions. However, the extent to which the information can be exchanged is dependent on how one can be trusted, which is partly dependent on whether one is seen as being able to keep the information in confidence as deemed necessary by the sender of the information.

Fairness. Fairness refers to one's perception of being treated fairly by others. It may be particularly the case in IJVs that the ethnocentric tendency of expatriates arouses local managers' sensitivity about being treated fairly. Locational advantages possessed by the local staff may cause expatriates' concern on whether they are treated fairly. Hence, the perception about whether being treated fairly by a working partner in the IJV can affect one's trust in that partner.

Integrity. This factor represents being honest and truthful towards others. It is hypothesised that honesty and truthfulness will enhance inter-personal trust between expatriates and local managers in the IJVs.

Loyalty. This factor refers to the quality of having motives for protecting and making the target person look good. This quality can be regarded as important for building inter-personal trust in the IJVs from the perspectives of "team work" in Western culture and "face maintenance" in Chinese culture.

Openness. Openness refers to one's tendency to freely share ideas and information with others. With the inherent difficulty in communication between expatriate and local managers, willingness in sharing ideas and information may narrow the communication gap, and enhance the motive to trust each other.

Promise fulfilment. Promise fulfilment means keeping promises. An IJV manager who does not keep his/her word will undoubtedly jeopardise the trust of the counterpart.

Receptivity. Receptivity refers to the character of readily taking ideas from others. It can be assumed that managers working as a team in the IJV will expect their own ideas to be taken account of by the counterpart, given the tendency of pursuing control by both parties. It can therefore be hypothesised that a certain degree of receptivity between the expatriate and local managers in the IJV is necessary for building mutual trust.

Overall trust. This dimension was employed to provide an assessment of the overall level of trust between the British and Chinese managers in the joint ventures. It was used in this research, in connection with the above conditions of trust, to examine how the British and the Chinese managers trust the colleagues of their own culture as compared with those of different cultures.

Need for trust. It refers to the extent to which one feels concerned about whether he or she is trusted by others. This factor reflects one's commitment to the mutual relationship in the interaction. It is hypothesised that the need for being trusted between expatriates and local managers in the IJVs will affect their interactive behaviour resulting in trust or mistrust.

The above dimensions provide plausible access to the factors underpinning the process of building up inter-personal trust in work relationships. For operational reasons, the research hypotheses were stated in a integrated form of CTI scales other than each single dimensions in order to avoid cumbersome statements. The hypotheses were stated in null forms based on the established theories discussed earlier.

As part of the objectives of the present study, the analyses were directed toward first testing the cross-cultural equivalence of the constructs included in the CTI instrument. This means that the ten constructs of the conditions of trust (CTI constructs plus the one for "need for trust", all referred as CTI for simplicity) should be tested as a hypothetical model with the new data from the samples of the present study to ensure the CTI instrument validated in the American culture is capable of measuring what they are supposed to measure across the British and Chinese cultures. The following hypotheses were developed for this purpose.

H1: In a British organisation the conditions that lead to inter-personal trust can be measured by the eleven latent variables (factors): availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, receptivity and need for trust, as measured by the CTI.

H2: In a Chinese organisation the conditions that lead to inter-personal trust can be measured by the eleven latent variables (factors): availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, receptivity and need for trust, as measured by the CTI.

H3 There exists an equal number of factors as measured by the CTI instrument with construct equivalence across British and Chinese managers in measuring the conditions and the overall level of inter-personal trust.

H4 There exist an equal number of factors as measured by the CTI instrument with the level of inter-personal trust in the same way for both British and Chinese managers.

It was assumed that the tests of the hypotheses H1-H4 would result in an instrument that either retains the complete original measuring items (which may be unlikely) or part of the dimensions but with some of the measuring items eliminated because of poor fit in the model. Expecting that valid measuring scales can be ascertained, the scales can then be used as operational instrument to identify differences between the British and Chinese managers with regard to the conditions of trust. On the basis of the research design, the following hypotheses were developed for testing whether there are differences in the conditions of trust with regard to British and Chinese organisations and SBJVs.

H5 There exists a set of factors as measured by the CTI instrument that have impacts on the level of inter-personal trust for both British and Chinese managers in SBJVs.

H6 There is no difference between the British and Chinese managers in a SBJV with regard to the level of trust in each other and the degree of the conditions of trust perceived on each other.

H7 There is no difference between the level and the conditions of inter-personal trust as perceived by the British manager on the British colleague in a British organisation, and those as perceived by the British manager on the Chinese counterpart in a SBJV.

H8 There is no difference between the level and the conditions of inter-personal trust as perceived by the Chinese manager on the Chinese colleague in a Chinese organisation, and those as perceived by the Chinese manager on the British counterpart in a SBJV.

3.3.2 Styles of handling inter-personal conflicts

As discussed in Chapter 2, the ROCI-II identifies five styles of handling inter-personal conflict along two basic dimensions: concern for self and concern for others. The first explains the degree (high or low) to which a person attempts to satisfy his or her own concerns. The second explains the degree (high or low) to which a person wants to satisfy the concerns of others. These dimensions indicate the motivational orientations of a given individual during conflict (Rubin and Brown, 1975). The hypotheses in this section are formulated based on these five factors.

Integrating. Integrating as a style of handling inter-personal conflict is characterised by high concern for self as well as the other party involved in conflict. It is concerned with collaboration between parties to reach a solution acceptable to both parties. This style shows the tendency of openness, exchange of information, and examination of differences when conflict is encountered. It is assumed that both British and Chinese managers in the joint venture would be motivated to handle their conflict with an integrating style because both parties are concerned with success of the operation.

Obliging. This style shows low concern for self and high concern for the other party involved in conflict. An obliging manager would play down the differences and emphasise commonalities to satisfy the concerns of the other party. With the following hypotheses it is intended to test whether the Chinese managers may show stronger obliging styles than their British counterparts, because the Chinese culture emphasise harmony and tolerance while the British culture encourages frankness and assertion.

Dominating. Dominating style is characterised by a high concern for self and a low concern for the other party involved in conflict. It is characterised by a win-lose orientation or forcing behaviour to win one's position. It is assumed that most IJV parties would understand that a win-win deal is more achievable than a win-lose situation.

Avoiding. This style is associated with low concern for self as well as for the other party involved in conflict. It is characterised by withdrawal, passing-the-buck, side-stepping, or "see no evil, hear no evil, speak no evil" situations. It may be unlikely that managers in IJVs would show such a style, since in most cases both parties have their specific advantages which give them different bargaining power. Managers assigned to the IJV may also feel the pressure from the parent companies to safeguard their interest.

Compromising. This style is associated with moderate concern for self as well as the other party involved in conflict. It is characterised by give-and-take or sharing whereby both parties give up something to make a mutually acceptable decision. This may be a typical style of the managers in the IJVs, for the reason that managers in IJVs would understand that imposing one party's will on the other may jeopardise the relationship and lead to failure of the deal.

Similar to the procedures of developing hypotheses of the conditions of inter-personal trust, the hypotheses with regard to the styles of handling inter-personal conflict were developed on these five dimensions but in the integrated form of ROCI-II statements. In the first place, the measuring scales must be tested for their cross-cultural equivalence. The hypotheses for testing measure equivalence of ROCI-II state as follows:

H9 In a British organisation the use of styles of handling inter-personal conflict can be measured by the five factors as measured by the ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising.

H10 In a Chinese organisation the use of styles of handling inter-personal conflict can be measured by the five factors as measured by the ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising.

H11 There exists an equal number of factors as measured by the ROCI-II instrument with construct equivalence across British and Chinese managers in measuring the styles of handling inter-personal conflict.

It was also assumed that the test results of the cross-cultural equivalence of the ROCI-II measure scales either retains the complete original measuring items or part of the dimensions but with some of the measuring items eliminated because of poor fit in the model. With the validated (and possibly modified) measuring scales, the differences in styles of handling inter-personal conflict can be identified with regard to whether British and Chinese managers use similar styles in handling conflict in their working relationships with their fellow colleagues in their home country organisations, hence hypothesis 12 was proposed:

H12 With regard to the styles of handling inter-personal conflict, there is no difference between British managers in British organisations in the UK and Chinese managers in Chinese organisations in China.

As the individual's styles of handling conflict are expected to be conditional on the nature of interaction with people and social and situational settings, efforts were made to investigate variability in the styles of handling conflict. The hypotheses for testing these differences with regard to the British and Chinese managers who are not involved and those who are involved in SBJVs are stated as follows:

H13 With regard to the styles of handling inter-personal conflict, there is no difference between British and Chinese managers in SBJVs.

H14 With regard to the styles of handling inter-personal conflict, there is no difference between British managers who are working with British colleagues in British organisations in the UK and those who are working with Chinese counterparts in SBJVs.

H15 With regard to the styles of handling inter-personal conflict, there is no difference between Chinese managers who are working with Chinese colleagues in Chinese organisations in China and those who are working with British counterparts in SBJVs.

3.3.3 Managerial competency

Research on IJVs in China has reported that many Western managers see their Chinese counterpart as less competent than they expected. Chinese managers perceive some Western managers not "ideal" as they anticipated. In the case of IJVs, it is likely that self-reference criteria would prevail in inter-personal judgement. Whatever the judgement, however, knowing the perceptions of one self by the counterpart will help to improve mutual understanding from the counterparts' perspectives. To identify whether there are differences in perceived managerial competency between the British and Chinese managers in SBJVs, the following hypothesis was developed and stated in a general form with regard to the twenty-one characteristics described in the previous chapter:

H16 There is no difference in perceived managerial competency as reflected in the twenty-one items of characteristics between British and Chinese managers as counterparts in SBJVs.

3.4 Conclusion

This chapter has sought to develop hypotheses on the three key issues underlying the inter-personal working relationships in SBJVs as indicated in the research framework

(see Figure 3.2). On the basis of the model, hypotheses have been generated in line with the two-fold aims of the research, i.e., testing the cross-cultural applicability of the measuring instruments, and identifying the differences between the British and Chinese managers. Following this line of analyses, several hypotheses were developed in regard to each of the key issues.

The hypotheses on the conditions of inter-personal trust were based on the factors measured by the CTI instrument, which consist of H1 to H8. Hypotheses H1 to H4 were set up for testing the cross-cultural equivalence of the CTI measuring scales. Hypotheses H5 to H8 were for identifying differences between different groups of British and Chinese managers in the British and Chinese organisations as well as SBJVs.

The hypotheses in regard to the styles of handling inter-personal conflict were based on the factors of ROCI-II measuring instrument, which consist of H9 to H15. Hypotheses H9 to H11 were for testing the cross-cultural equivalence of the ROCI-II measuring scales. Hypotheses H12 to H15 were for identifying differences between the different groups of British and Chinese managers in the British and Chinese organisations as well as SBJVs.

The perceived managerial competency was characterised by the twenty-one characteristics adapted from the literature. To identify the differences between the British and Chinese managers in the SBJVs, a general hypothesis H16 was developed to be tested with the sample data.

For the convenience of an overall view, these hypotheses and related issues are summarised in Table 3.1.

Table 3.1 A summary of the research hypotheses

Research issues	Measure-ment instru-ments		Hypotheses	Test objectives
Conditions of inter-personal trust	CTI	H1	In a British organisation the conditions that lead to inter-personal trust can be measured by the eleven latent variables (factors): availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, receptivity and need for trust, as measured by the CTI.	Test cross-cultural equivalence.
		H2	In a Chinese organisation the conditions that lead to inter-personal trust can be measured by the eleven latent variables (factors): availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, receptivity and need for trust, as measured by the CTI.	Test cross-cultural equivalence.
		H3	There exists an equal number of factors as measured by the CTI instrument with construct equivalence across British and Chinese managers in measuring the conditions and the overall level of inter-personal trust.	Test cross-cultural equivalence.
		H4	There exist an equal number of factors as measured by the CTI instrument that explain the level of inter-personal trust in the same way for both British and Chinese managers.	Test cross-cultural equivalence.
		H5	There exists a set of factors as measured by the CTI instrument that have impacts on the level of inter-personal trust for both British and Chinese managers in SBJVs.	Test correlations.
		H6	There is no difference between the British and Chinese managers in a SBJV with regard to the level of trust in each other and the degree of the conditions of trust perceived on each other.	Test mean differences between groups.
		H7	There is no difference between the level and the conditions of inter-personal trust as perceived by the British manager on the British colleague in a British organisation, and those as perceived by the British manager on the Chinese counterpart in a SBJV.	Test mean differences between groups.
		H8	There is no difference between the level and the conditions of inter-personal trust as perceived by the Chinese manager on the Chinese colleague in a Chinese organisation, and those as perceived by the Chinese manager on the British counterpart in a SBJV.	Test mean differences between groups.

Table 3.1 A summary of the research hypotheses (continued)

Research issues	Measure-ment instru-ments		Hypotheses	Test objectives
Styles of handling inter-personal conflict	ROCI-II	H9	In a British organisation the use of styles of handling inter-personal conflict can be measured by the five factors as measured by the ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising.	Test cross-cultural equivalence.
		H10	In a Chinese organisation the use of styles of handling inter-personal conflict can be measured by the five factors as measured by the ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising.	Test cross-cultural equivalence.
		H11	There exists an equal number of factors as measured by the ROCI-II instrument with construct equivalence across British and Chinese managers in measuring the styles of handling inter-personal conflict.	Test cross-cultural equivalence.
		H12	With regard to the styles of handling inter-personal conflict, there is no difference between British managers in British organisations in the UK and Chinese managers in Chinese organisations in China.	Test mean differences between groups.
		H13	With regard to the styles of handling inter-personal conflict, there is no difference between British and Chinese managers in SBJVs.	Test mean differences between groups.
		H14	With regard to the styles of handling inter-personal conflict, there is no difference between British managers who are working with British colleagues in the British organisations in the UK and those who are working with Chinese counterparts in SBJVs.	Test mean differences between groups.
		H15	With regard to the styles of handling inter-personal conflict, there is no difference between Chinese managers who are working with Chinese colleagues in the Chinese organisations in China and those who are working with British counterparts in SBJVs.	Test mean differences between groups.
Managerial competency	The twenty-one single-item scales	H16	There is no difference in perceived managerial competency as reflected in the twenty-one items of characteristics between British and Chinese managers as counterparts in SBJVs.	Test mean differences between groups.

CHAPTER 4 METHODOLOGY

4.1 Introduction

This chapter outlines the process and methodologies used in this research. It is divided into four main parts in the following sections. Section 4.2 gives an overview of the basic principles of the research process. Section 4.3 describes the research design in a systematic approach. Section 4.4 discusses the major concerns in cross-cultural research from the "emic" versus "etic" perspectives, and describes the methods for achieving cross-cultural equivalence and comparability in this research. Section 4.5 provides a conclusion to the chapter.

4.2 An overview of the research process

Research can be described as "an organised, systematic, data-based, critical, scientific inquiry or investigation into a specific problem, undertaken with the objective of finding answers or solutions to it" (Sekaran, 1992, p.4). In conducting a research project, one should intend to gain the best possible scientific knowledge about the specific problem or phenomenon under study. According to Giorgi (1995, p.26), scientific knowledge is defined as knowledge that is systematic, methodical, critical and general. Systematic means that different aspects of knowledge can potentially be related to each other, hence the outcome is ultimately not chaos, but patterns and structures. Methodical means that data must be obtained and analysed with the method that is inter-subjective. The significance of inter-subjectivity lies in the ability of a researcher to understand and evaluate the methods of others and to conduct similar observations so as to validate empirical facts and conclusions (Frankfort-Nachmias and Nachmias, 1996, p.16). To be critical denotes that first, things are not merely accepted at face-value; a researcher should try to test or challenge them even in the process of analysing data, and these steps should be duly noted. Second, it is incumbent upon the researcher that the research results be revealed to the scientific community (through publication, for instance) so that the relevant scientific community can also have a chance to criticise or replicate the findings. Generality

means that the results of the research should have application beyond the situation in which they were obtained. It is recognised, however, that science often has to remain content with degrees of generality as the application of the research results may be limited by many contextual or random factors.

In line with the above principles, the basic research process, structure and methodological definitions used in this research are based on the systematic approach (Sekaran, 1992) as summarised in Figure 4.1. The work relevant to observation, preliminary data gathering, problem definition and theoretical framework is described in the figure and most of this was discussed in previous chapters. The following sections focus on the methodological aspects, i.e., the research design.

4.3 The research design

By research design it is meant "the overall configuration of a piece of research: what kind of evidence is gathered from where, and how such evidence is interpreted in order to provide good answers to the basic research question" (Easterby-Smith, Thorpe, and Lowe, 1991). The extent of scientific rigor in a research study lies in how carefully the researcher has chosen the appropriate alternatives of methods, approaches and perspectives, taking into consideration the purpose for which the study is undertaken (Sekaran, 1992, p.94). The systematic structure of research design suggested by Sekaran (1992, p.93, see Figure 4.1) provides a logically impeccable approach that fits the purpose of this research. The following sections discuss the dimensions relating to where the study is conducted (the study setting), what type of a study it is (type of investigation), the extent to which the researcher manipulates and controls the study (researcher interference), the duration of the study (time horizon), and at what level the data are analysed (unit of analysis), deciding what the sample is (sampling design), how the data are collected (data collection methods), how variables are measured (measurement), and how they are analysed to test the hypotheses (data analysis).

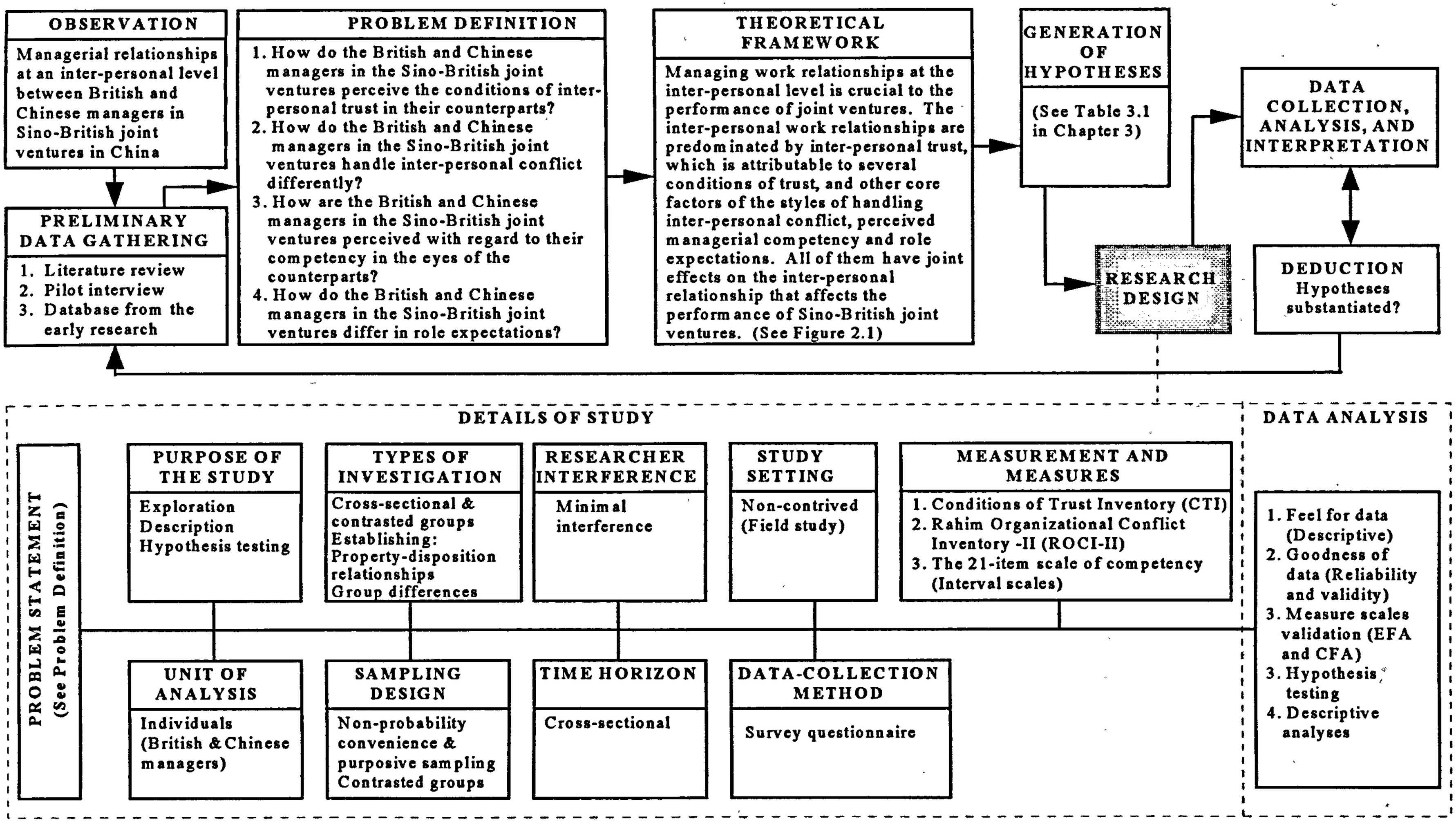

Figure 4.1 The research process and design (Source: Based on Sekaran, 1992, p.93)

4.3.1 The purpose of the study

Business research can be categorised into applied research and basic or fundamental research. The main distinction between the applied and fundamental research is that the former is aimed at solving a specific problem currently being experienced in an organisation, whereas the latter has the more general objective of generating knowledge and understanding of phenomena and problems that commonly occur in various organisational settings, which consequently add or contribute to the general body of knowledge in a particular area of interest to the researcher (Sekaran, 1992, p.5-7).

The present research possesses the nature of fundamental research since it investigates in a general sense key issues underlying managerial relationships in SBJVs in comparison with those in British and Chinese organisations, and seeks to add to the general body of knowledge in cross-cultural management of IJVs. Given such a nature, the findings also provide valuable implications for enhancing business practitioners' understanding of the important issues in managing IJVs in general, and provide valuable insights into critical issues of managing SBJVs in particular.

In addition, the purpose of research can be classified as exploratory, descriptive and hypothesis testing. This research involves all three of these categories, with the major part of work on hypothesis testing.

Exploratory nature of the study

As discussed in earlier chapters, the current situation of both academic research and business calls for new efforts in investigating the covert factors that underlie the problems of IJVs. Since few studies have been conducted regarding the core issues at inter-personal level in IJVs, a pilot study was carried out in the UK and China. It was conducted using interviews with a total of seven British managers and ten Chinese managers from twelve SBJVs in eight cities in China in 1994. A questionnaire was

used in the interviews and comments made by the interviewees were recorded by tape or notes.

The pilot interviews sought to a) identify key issues of major concern from business practitioners' perspectives; b) gather first-hand information to support the formulation of the theoretical framework; and c) identify potential areas of covert factors that underlie the key issues and that should be incorporated in the research instrument in the large scale survey.

The information gathered from the pilot study helped to screen the focus of the research and refine the design of the questionnaire. This helped the development of the research framework outlined in the previous chapter, and resulted in the finalised questionnaire used in the later survey. To keep the presentation of the present work within a reasonable volume, the details of the pilot interviews are excluded. Only the information relevant to the research framework was used for exploratory analyses, which will be described in the following chapters.

Descriptive nature of the study

In general, a descriptive study is to ascertain and to be able to describe the characteristics of variables in a situation. It is essential to effectively employ descriptive approaches in many research situations in order to present quantitative data in a meaningful form. In the following chapters, the descriptive method will be extensively used to present the profile and discussions of both qualitative and quantitative data.

Hypothesis testing

Hypothesis testing is commonly used to explain the nature of certain relationships or to establish the differences between groups or independence of two or more factors in a situation. This research attempts to explain, through hypothesis testing, the relationship between the variables that are involved in inter-personal trust, styles of

handling inter-personal conflict, and perceived managerial competency in SBJVs. The tests attempt to assess the cross-cultural applicability of the two research instrument (conditions of trust and style of handling conflict), and identify differences between British and Chinese managers with regard to the key issues of the conditions of inter-personal trust, styles of handling inter-personal trust and managerial competency. The research hypotheses have been identified in Chapter 3.

4.3.2 The unit of analysis

The unit of analysis refers to the most elementary part of the phenomenon to be studied (Frankfort-Nachmias and Nachmias, 1996) and defines the level at which the research data is aggregated during subsequent analysis (Sekaran, 1992). The choice of the unit of analysis depends on the research questions that are being addressed and the level at which research results are to be generalised (Judd, Smith and Kidder, 1991, p.356). Generalisations based on individuals as units of analysis can be quite different from generalisations based on groups, because similar concepts may be used to represent attributes that can, unknowingly, differ in their observable characteristics depending on the unit of analysis (Frankfort-Nachmias and Nachmias, 1996, p.54).

It is important to be aware of and to avoid, throughout the research process, two types of error that often occur in generalisation when the unit of analysis is not at the same level as the unit to which generalisation is sought. The first is known as *ecological fallacy*, i.e., to generalise directly from a more complex to a simpler unit of analysis or from a higher to a lower level (Frankfort-Nachmias and Nachmias, 1996, p54; Judd, Smith and Kidder, 1991, p.356). The second is *individualistic fallacy*, i.e., the situation where inferences about groups, societies, or nations are drawn directly from evidence gathered about the behaviour of individuals (Frankfort-Nachmias and Nachmias, 1996, p.55). Since individuals do not have the same characteristics as groups and groups do not have the same characteristics as individuals, the nature of the data collected and how the data are to be analysed are integral to the unit of analysis (Sekaran, 1992, p.107). It is important that the research procedure, particularly the scope and the level of generalisation and theorising, be always

congruent with (e.g., at the same level as) the unit of analysis chosen (Frankfort-Nachmias and Nachmias, 1996, p.54; Judd, Smith and Kidder , 1991, p.357).

In this research, individuals (i.e., British and Chinese managers) constitute the unit of analysis. This is because the research variables are defined to measure the attitudes and perceptions of individual managers with regard to the key research issues at the inter-person interaction level (i.e., the most elementary part of the phenomena under the study), and the data were gathered from each individual whose response was treated as an individual data source in the analyses (Bourque and Clark, 1994, p.46; Sekaran, 1994, p.106). Therefore, the implications and generalisations from the research results based on the statistical inference apply to the behavioural and attitudinal properties of individual managers.

4.3.3 Types of investigation

Generally two types of investigation are found in social sciences - causal versus non-causal. The intention of a researcher conducting a causal research is to be able to identify some constructs as causes and other as effects. When the researcher is not intending to identify cause-effect relationships between constructs, but in delineating the important variables that are associated with the problem, it is called a correlational study (Sekaran, 1992, p.100).

In a causal study, some variables may have to be manipulated and others controlled, which in most cases have to be achieved in experimental studies by random sampling. In social sciences, however, it is not always possible to manipulate and control some of the variables under study since researchers may be discouraged or prevented from conducting controlled experiments because of difficulties resulting from social, political and ethical considerations (Frankfort-Nachmias and Nachmias, 1996, p.127). This is particularly the case with studies on joint ventures which entail sensitivity of information about the participating companies. Due to the cost, time and practical problems involved in experimental studies, research on cross-cultural issues based on the responses of individuals have almost always depended on non-random samples

(e.g., convenience sampling) (Brislin and Baumgardner, 1971), but often employing specialised statistical techniques to approximate some of the operations in the experimental design (Frankfort-Nachmias and Nachmias, 1996, p.129).

The particular features of the research design for this study conform to the nature of the cross-sectional and the contrasted groups designs (Frankfort-Nachmias and Nachmias, 1996, p.129). The cross-sectional design is often identified as a type of survey research by which data are gathered (e.g., by asking a sample of individuals to respond to a set of research questions) just once, perhaps over a period of days or weeks or months (Sekaran, 1992, p.109; Frankfort-Nachmias and Nachmias, 1996, p.129). The contrasted group design is one in which the units of analysis (e.g., individuals) are regarded as members of categorical groups who share some attribute that assigns them to an identifiable category, such as males, Democrats or Catholics (Frankfort-Nachmias and Nachmias, 1996, p.132). Members of each group are then measured with respect to the dependent variables. For this research such grouping was based on whether the individual managers were British or Chinese and whether they were involved in SBJVs.

The types of design chosen for the present research are for examining and describing the *property-disposition relationship*, i.e., the relationship between some characteristic or quality of a person (*property*) and a corresponding attitude or inclination (disposition) (Frankfort-Nachmias and Nachmias, 1996, p.127), for example, the relation between cultural origin (e.g., British or Chinese managers) and an attitude such as trust. Depending on the specific issues in question, the analyses and discussions in the following chapters will either describe the pattern of the relations or attempt to make inferences about causal relations between some of the properties and dispositions. For the convenience of understanding how the research design fitted with the data analyses, the structure of the research design and how they were applied in the present research will be described in detail in Chapter 5 on data analyses and hypothesis testing.

4.3.4 Researcher interference and study setting

The extent of researcher interference is directly dependent on whether a causal or correlational study is undertaken. For a correlational study data is collected in the natural setting of the organisation with the researcher interfering minimally with the normal flow of events (Sekaran, 1992, p.102). For this study, the researcher interference was kept to minimal and the survey was conducted in non-contrived settings. For instance, the survey of the larger sample of British and Chinese managers who were not in SBJVs was conducted by administering the questionnaire by mail. While the survey of the smaller sample of British and Chinese managers in SBJVs was conducted by administering the questionnaire in person in the respondents' offices or other pre-arranged venues (except a few to whom the questionnaire was administered by mail), the researcher only at the beginning of the interviews suggested the respondents refer to a direct counterpart in his/her working relationships in the joint venture, and listened for the comments about or beyond the questionnaire topics given by some respondents when completing the questionnaire.

4.3.5 Time horizon

Studies in which data are gathered just once without involvement of before and post-events or several points in time are classified as one-shot or cross-sectional studies. Studies that involve gathering data on the dependent variable at two or more points in time are longitudinal studies. This research has taken a cross-sectional approach as it is not feasible to conduct a longitudinal study because of limits on time and resources. Given its disadvantages as compared with longitudinal research, cross-sectional design does have advantages in sample representativeness and reducing response bias (e.g., Malhotra, 1996). From a comparative point of view, this is similar to a "spatial comparison" method, i.e., comparison "relative to a different locational, national, cultural or regional point" (Buckley and Chapman, 1996). The survey for this research was carried out in the UK during May 1995 and January 1996, and on a visit to China during December 1995 and January 1996.

4.3.6 Sampling design

The basic objective of sampling is to select a sufficient number of elements from the population so that the properties and characteristics of the sample that are identified through studying the sample subjects can be generalised to the population (Sekaran, 1992). Hence the key requirement for selecting a sample is to maximise the extent to which the sample is representative of the population under study. According to traditional sampling procedures, if one wishes to develop generalisations applying to the whole population, one should randomly select a sample from the population, obtain the findings from the sample, and then generalise those findings back to the population.

With cross-cultural research, however, it is recognised that random sampling is "easier said than done" (Elder, 1976, p.220). In fact, most researchers engaged in social sciences studies, particularly in cross-cultural research, have preferred not to select random samples; instead, they advocated highly purposive or convenience sampling (with matched groups if possible) (Elder, 1976; Frey, 1970; Brislin and Baumgardner, 1971). Among the reasons that account for this option, convenience and economy is an important one that under certain circumstances may outweigh the advantages of using probability sampling; another reason is that in many cases the sampling population cannot be precisely defined or a list of the sampling population is unavailable (Frankfort-Nachmias and Nachmias, 1996, p.184). As probability samples are distinguished by the fact that each population element has a known, non-zero chance of being included in the sample, it is possible to identify the probability of each sampling element to be chosen only if the population can be precisely defined[1].

For the above reasons, most of cross-cultural research is descriptive in method rather than experimental, and takes conditions as they exist and looks for relations between

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[1] It should be pointed out here that it is sometimes noticeable in some published papers that probability sampling was claimed and a less-than-hundred response rate was reported. Strictly speaking, it is misleading to claim the *resulting sample* as a probability sample if only a portion of the questionnaires are returned; in such a case the resulting sample loses its status as a probability sample and the statistical inferences extend only to the subjects similar to those who responded to the questionnaire (see Huck and Cormier, 1996).

variables (Guthrie and Lonner, 1986, p.239). The value of using convenience sampling has been well recognised as long as it serves the research purpose and notes are made of the characteristics of the subjects and environment which could potentially influence the results or their interpretation (Brislin and Baumgardner, 1971; van de Vijver and Leung, 1997).

With regard to this study, as will be described in the next section, it is impossible to precisely define an exhaustive list of the total population of the individual managers involved in SBJVs. For this reason sampling with randomisation and experimental control is not feasible for this research. In addition, it is known from early research experience and other studies that most executives (both in the UK and China) tend to be sensitive to any inquiry about their business and are reluctant to give their personal opinions for various reasons. For instance, in this study most of the participants from both British and Chinese sides of SBJVs agreed to participate in the survey only after they had received consent from their counterparts. With such constraints, therefore, the samples were selected based on the availability of voluntary participants who met the criteria of the research and were within the pre-identified sampling frame.

For the purpose of comparative analysis as mentioned in Chapter 3 (see Figure 3.3 on p.67), the sample was designed to consist of groups (sub-samples) representing British managers who were not involved in SBJVs (Group BM), Chinese managers who were not involved in SBJVs (Group CM), British managers who were involved in SBJVs (Group BM_{jv}) and Chinese managers who were involved in SBJVs (Group CM_{jv}). The structure of the samples and the relevant comparative perspectives are shown in Figure 4.2.

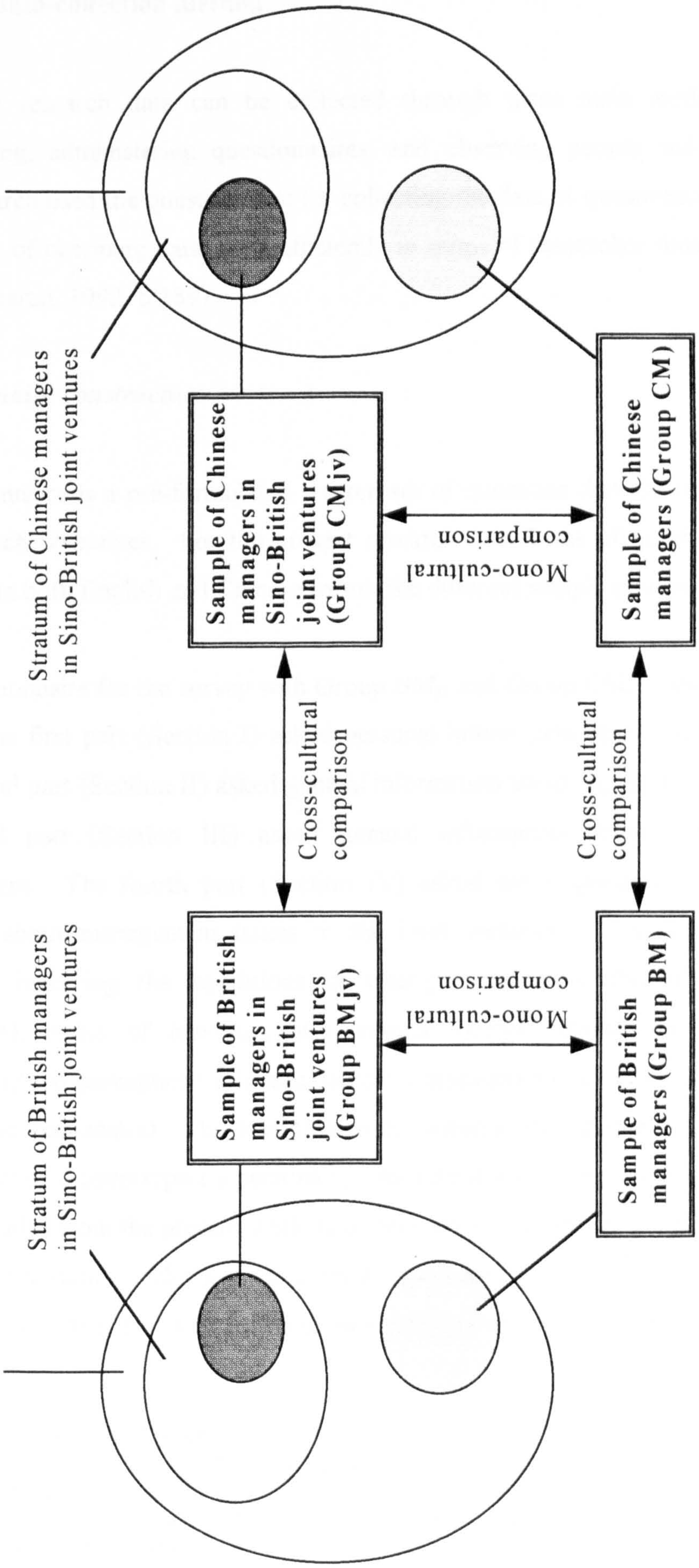

Figure 4.2 Sampling structure and comparison of contrasted groups

4.3.7 Data-collection method

In survey research data can be collected through three main methods, namely interviewing, administering questionnaires, and observing people and phenomena. This research used the questionnaire for collecting the data as questionnaires have the advantage of obtaining data more efficiently in terms of researcher time, energy and costs (Sekaran, 1992, p.189).

Questionnaire construction

A questionnaire is a pre-formulated written set of questions that are translated from the research objectives. For the present research two forms of questionnaire were designed in both English and Chinese to suit the different sample groups.

The questionnaire for the survey with Group BM_{jv} and Group CM_{jv} consisted of three parts. The first part (Section I) asked personal information about the respondents. The second part (Section II) asked general information about the equity joint venture. The third part (Section III) asked general information about the contractual arrangement. The fourth part (Section IV) asked the respondent's opinions and attitudes about management issues in the joint ventures. This section included questions involving the conditions of inter-personal trust (based on the CTI instrument), styles of handling inter-personal conflict (based on the ROCI-II instrument) and perceptions of a counterpart's managerial competency (based on the twenty-one item scales). This section also contained a few open-ended questions on expectancy of a counterpart's personality characteristics. The data from this section were excluded from the present work since they are for related research in the future[2]. The back-translation technique was used for the Chinese version of the questions on inter-personal trust, styles of handling inter-personal conflict, and perceptions of the

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[2] Originally this section of questions was included in the questionnaire as an attempt to maximise the resource utilisation for the survey by gathering data for a related issue that may possibly be included in the present work. It was realised at a later stage that the nature and the volume of the data were beyond the scope of this research which had limited resources and time limit. Therefore the data in this section is excluded from the present research and is left for future analysis.

counterpart's managerial competency. A full copy of the survey questionnaire is reproduced in Appendix 1.

The questionnaire for the survey with Group BM and Group CM was a cut-down version (in both English and Chinese) of the questionnaire used for Group BM_{jv} and Group CM_{jv}. It consisted of questions on the conditions of inter-personal trust, styles of handling inter-personal conflict and a few questions on demographic information about the respondents. The questions on the expectancy of a working partner's personality characteristics are excluded from the present work for the same reason explained above.

Survey implementation

Group BM

With the group of British managers not involved in SBJVs (Group BM in Figure 4.2), a self-administered questionnaire was used. For convenience of operation and economy, the questionnaires were administered to this sub-sample through two approaches.

The first was through the assistance of De Montfort University students in industrial placement in the UK. On 3rd November 1995, the questionnaires were sent to one hundred and three of these students. Five copies of the questionnaire with the covering letters addressed to the potential respondents and pre-paid envelopes were sent to each of them. The students were asked to assist in forwarding the questionnaires to possibly five managers at various levels in the organisation. Only one student wrote back and returned the uncompleted questionnaire as she was in a French company in France, which did not fit the sampling requirement. One company rejected and returned the uncompleted questionnaire.

By December 1995 a total of one hundred and fourteen questionnaires were duly completed and returned. In order to encourage participation and obtain a high rate of

response, the participants were told not to indicate their company and personal names in the questionnaire. For this reason the absolute number of companies represented by the respondents cannot be identified with precision. After reviewing the data in the completed questionnaires, however, it can be believed that the respondents represented nearly one hundred organisations in the UK. Furthermore, each of the one hundred and one students worked in different organisations, and it is believed that the chances for each student to have at least one manager to participate are higher than that to have more than one participant in the same organisation.

The second approach was through the part-time MBA course members ranging from year-one to year-three levels at Leicester Business School. They were full-time employees in managerial positions in the UK. As an attempt to minimise the potential bias resulting from their connection with Leicester Business School, the questionnaires were administered by mail without the researcher's direct contact with the respondents. On 12th July 1996, a total of ninety copies of the questionnaire with the covering letter and pre-paid envelope were sent to ninety course members by post. They were also told not to indicate their organisation's and individual's names. By August 1996, a total of twenty copies of the questionnaire were duly completed and returned. This added up to a total of one hundred and thirty-four usable questionnaires from the Group BM. A profile of the Group BM obtained from both approaches is given in the next chapter.

Group CM

With the group of Chinese managers not involved in SBJVs (Group CM in Figure 4.2), self-administered questionnaires were used. This sub-sample group was obtained via the researcher's personal contacts in China. One of them was a division chief executive in the China State Economic and Trade Commission, who provided assistance in organising the survey in approximately one hundred and sixty organisations in more than thirteen industrial and business sectors in Beijing. In August 1995 the researcher posted two hundred copies of the questionnaire to the division chief executive in the China State Economic and Trade Commission, who

distributed them through the headquarters of the organisations to the managers at various levels. A total of one hundred and sixty-eight usable questionnaires were collected by the chief executive of the China State Economic and Trade Commission from the organisations. The researcher collected the questionnaires on the visit to Beijing in November 1995.

Another contact who provided support was a vice-president of China Enterprise Management Training Centre at Chengdu, Sichuan Province. The vice-president personally administered the questionnaire to fifty-six managers who were from industrial companies in Sichuan province and were attending a short course in management training at the institute. Although the majority of the participants did not have previous experience in questionnaire survey, potential response bias and errors were minimised through the vice-president's introduction to the methods of responding to the questionnaire and ensuring each participant responded the questions independently. A total of fifty-one usable questionnaires were collected from the managers representing fifty-one companies in Sichuan Province.

A senior accountant in a private company who is a friend of the researcher provided support in the survey in Chongqing, Sichuan Province when the researcher visited the city in December 1995. Through his personal contacts with some local companies, sixteen usable questionnaires were collected from managers representing sixteen companies in Chongqing.

In sum, two hundred and thirty-five managers responded the questionnaire in Chinese version, representing about two hundred industrial and business organisations in Beijing and Sichuan in China. A profile of the Chinese respondents is given in the next chapter.

Group BM_{jv} and Group CM_{jv}

The sub-samples of British and Chinese managers who were involved in SBJVs were obtained from the sampling frame constructed from the database gathered since 1992

based on the researcher's early work (Cui, Chi, 1993) and other sources including *China-Britain Trade Review* published by the China-Britain Trade Group in the UK and unpublished information acquired from the Department of Trade and Industry. A few companies were identified when their chief executives contacted the researcher by fax or telephone to request for information from the researcher's early work on SBJVs or asked for advice about their joint venture business with China. These companies have been added to the database.

The original sampling frame was based on SBJVs recorded in the database, which included a total of one hundred and one British firms known to have established joint ventures in China. Following extensive contacts by telephone calls with these companies, it was clarified that some of them were not involved in joint ventures with China, some of them were aborted after initial negotiations, and a few others were run by their subsidiaries overseas (e.g., the USA, Singapore, and Hong Kong). Some executives claimed that they had only been involved in contractual arrangements or transfer of technology or licensing, but for some unknown reason they were publicised as involved in joint ventures. This may have resulted from a different understanding of the definition of joint ventures.

To minimise possible sampling frame error, a screening process was carried out. After extensive telephone communication with the one hundred and one companies based on the database, seventy-two British companies based in the UK were identified as involved in either contractual joint ventures or equity joint ventures with China (broadly called "SBJVs" for the present study). These companies were eventually included as the research sampling frame of SBJVs. It should be noted that since the focus of this study is on comparison between British and Chinese managers, those SBJVs involving non-British (including a number of overseas Chinese) chief executives and operated by the subsidiaries outside UK were not included in the sampling frame.

In the process of identifying the SBJV sampling frame, a summary report of the researcher's early work on SBJVs was sent to each potential participant in the original

sampling frame as an incentive to encourage them to participate. After extensive communication by repeated telephone calls and letters, fifty-one British companies involved in SBJVs agreed to participate in the survey. After further clarification it was found that nine companies which originally agreed to participate had non-British executives in the SBJVs. Therefore these companies had to be excluded. Eventually, forty-four companies were selected into Group BM_{jv} and the questionnaires were administered to the British executives who were directly involved in the SBJVs either by mail or personal interviews. Most of them also assisted in providing contacts with their Chinese counterparts. Some of them helped to forward the Chinese version of the questionnaire to their Chinese counterparts.

The questionnaires in English were posted to British managers in SBJVs in the UK commencing from June 1995. With those who were in their offices in China, the researcher administered the questionnaire in person in their offices in China between November and December 1995. By February 1996, forty-seven copies of the English version of the questionnaire were collected from the British participants in connection with thirty-four British companies. For confidentiality reasons agreed with the participants, the names of the companies cannot be released.

The sub-sample of the Chinese managers involved in SBJVs (Group CM_{jv}) was obtained mainly through the contacts with the British participants. A few more companies were identified on the researcher's visit to China between November and December 1995. On that visit the researcher administered the questionnaire in Chinese to most of the Chinese respondents in person at their offices, a few by fax and another few by telephone interviews. By February 1996, a total of thirty-five copies of the questionnaire in Chinese were collected from the Chinese participants in connection with thirty-one Chinese companies. For confidentiality reasons agreed with the participants, the names of the companies cannot be released. A brief profile of the Chinese respondents is given in the next chapter. The sample structures of Group BM_{jv} and Group CM_{jv} are shown in Table 4.1. It should be noted that the two sub-samples of Group BM_{jv} and Group CM_{jv} were not formally matched because of several reasons explained in the next chapter.

Table 4.1 The sample structure of Group BM_{jv} and Group CM_{jv}

	Total number	Percentage of the sampling frame	Percentage of the selected sample
The sampling frame of SBJVs	72		
The selected sample of British firms with SBJVs	44	61%	
British firms returned questionnaire	34	47%	77%
Chinese firms returned questionnaire	31	43%	70%
British respondents	47 (Estimated response rate: 53%)		
Chinese respondents	35 (Estimated response rate: 40%)		

Note: The numbers of SBJVs were initially identified by the names of British parent firms. The numbers of the British parent firms selected in the sample are equal to the numbers of Chinese parent companies selected in the sample. The estimated response rates were based on the assumption that two potential participants in each of the initial samples of British and Chinese parent companies were expected to return the questionnaire.

Response rate. Response rate is defined as the percentage of respondents in the initial sample from whom complete responses are obtained. Response rate defines the extent of possible bias from non-response, hence it serves as the important index of data quality in a survey (Judd, Smith and Kidder, 1991, p.216). However, in research practice there is no easy answer as to what constitutes an acceptable response rate since scientists do not agree on a standard for a minimum response rate (Fowler, Jr, 1993, p.40; Frankfort-Nachmias and Nachmias, 1996, p.232). In addition, a high response rate is meaningful only when the initial sample is properly designed and constitutes a representative sample of any larger population (Judd, Smith and Kidder, 1991, p.216).

Several received studies by field surveys of business chief executives involving psychometric scales generally obtained a response rate in the range of 5-21 percent: Habib (1987) reported 15 percent; Berg and Friedman (1978) reported 5-20 percent; Jain and Tucker (1995) reported 20 percent; and Brown and Day (1981) reported 21 percent.

For calculating response rate, the key factor is to determine eligibility of the units in the sample, because the response rate is uncertain if there are some units for which information needed to determine eligibility is not obtained (Fowler, Jr, 1993, p.39). For the present research, there is no information regarding total population size (i.e., the number of managers involved in SBJVs), and neither is it possible to determine the eligibility of the full potential participants in the sample due to the sensitivity of the research subject. These reasons precluded any direct calculation of response rate (Johnson, Cullen, Sakano and Takenouchi, 1996, p.990). Testing for the non-response bias was not used since it was deemed not obtainable.

However, the resulting samples provided adequate representation of the research population in terms of the numbers of companies from the sampling frame and the respondents' involvement in SBJVs. As Table 4.1 indicates, with the total number of 72 SBJVs selected in the sampling frame, participants were selected from 44 British and Chinese parent firms to represent the total number of SBJVs in the sampling frame, giving a 61% ratio of representativeness. To obtain estimated response rates, it was assumed that on average two potential participants in each of the British and Chinese parent companies selected in the sample were expected to fill out the questionnaire. This gives an initial sample of 88 British and Chinese managers, hence an estimated response rate (Fowler, Jr, 1993; Johson, Cullen, Sakano and Takenouchi, 1996) of 53% for the British respondents (47 returned questionnaires) and 40% for the Chinese respondents (35 returned questionnaires), and an overall estimated response rate of 47%, which compares favourably with other received studies described earlier (see Table 4.1)

4.3.8 Measurement

Measurement of the variables under examination is an integral part of research; unless the variables are measured in some way, it is impossible to test hypotheses and find answers to complex research issues (Sekaran, 1992, p.149). An important question is to know: What is measurement? The most frequently quoted definition of measurement is that given by Stevens (1951), which defines measurement as a

procedure in which the researcher assigns numerals (e.g., numbers or other symbols) to empirical properties (variables) according to rules. In social sciences, however, this definition is regarded as inappropriate, since many of the phenomena to be measured in social science research are typically too abstract to be adequately characterised as either objects or events (Carmines and Zeller, 1994). To be more relevant to the social sciences, it is suggested to view measurement as the process of linking abstract concepts to empirical incidents by involving an explicit, organised plan for classifying and quantifying the particular sense data at hand (the incidents) in terms of the general concept in the researcher's mind (Carmines and Zeller, 1994, p.2; Riley, 1963, p.23).

Constructs in the social relationships should be defined in abstract, theoretically related terms (other constructs), i.e., the construct's "nomological net: the set of construct-to-construct relationships derived from the relevant theory and stated at an abstract, theoretical level" (Judd, Smith and Kidder, 1991, p.46). In research practice, a construct or a concept is operationally defined (operationalised) by looking at the behavioural dimensions, facets, or properties, denoted by the concept, and categorising these into observable and measurable elements. At an empirical level, the focus of measurement is on the observable response from the subjects; at a theoretical level, the focus is on the underlying unobservable (and directly unmeasurable) concept that is represented by the response (Carmines and Zeller, 1994, p.2). In other words, a properly designed measurement should adequately capture the crucial relationship between the empirically grounded indicators (the observable response) and the underlying unobservable concepts in order to warrant the evaluation of the empirical applicability of theoretical propositions in a research study.

A measurement instrument can be developed by the researcher through basic research, or can be adopted from received studies that have passed tests of validity and reliability for testing in new contexts (Brislin, 1986). There are considerable advantages in using existing instruments. For instance, time and costs can often be conserved when using existing instruments. In addition, using existing instruments allows comparisons of the published studies with newly acquired data, which allow a

literature to be built up around a commonly shared set of concepts and operational definitions (Brislin, 1986, p.138).

Due to the time and economy constraints, this research does not seek to develop measurement scales. Through a literature review, received measurement scales on inter-personal trust, i.e., "CTI" (Butler, Jr., 1991), styles of handling inter-personal conflict, that is, "ROCI-II" (Rahim and Magner, 1995) and managerial competency (Brewster, Lundmark and Holden, 1993) were identified as suitable for this research. Such a replication of the measurement scales in two different national settings (Britain and China) tests two phenomena simultaneously: the universality of the measurement scales and the characteristics of subjects from those two nations. At this point an issue that arises from a cross-cultural research perspective is the transferability of the concepts and measures developed in the American culture to the British and Chinese cultures. This issue will be dealt with in the section 4.4 on cross-cultural research issues.

In this research, five-point interval (Likert) scales were used for the measurement of the variables of the conditions of inter-personal trust (CTI), styles of handling inter-personal conflict, and perceptions of counterparts' managerial competency. Nominal scales were used for other demographic variables. In the questionnaire, detailed instructions were given in each section on the nature of the questions and how to apply the scale to respond to the questions.

Validity

Validity is defined as the extent to which a measure or set of measures (i.e., a construct's indicators) accurately represents the concept under study (Hair, Jr., Anderson, Tatham, and Black, 1995, p.3, 623). In other words, the validity of a measuring instrument indicates the extent to which differences in scores on it reflect true differences among individuals on the characteristic that are sought to be measured, rather than constant or random errors (Churchill, Jr., 1995, p.533). A distinction should be made in that one validates not the measuring instrument itself but

the measuring instrument in relation to the purpose for which it is being used, because a measuring instrument can by relatively valid for measuring one kind of phenomenon but entirely invalid for assessing other phenomena (Carmines and Zeller, 1994, p.9).

In the social sciences there are three main types of validity that are used to test the goodness of measures: content validity, criterion-related validity and construct validity (Carmines and Zeller, 1994, p.9; DeVellis, 1991; Sekaran, 1992, p.171).

Content validity focuses on item sampling adequacy, i.e., the extent to which the measure includes an adequate and representative set of items that would capture the content domain of the concept (Churchill, 1995, p.534; DeVellis, 1991, p.43; Sekaran, 1992, p.170). It rests on two common varieties: face validity and sampling validity. Face validity relies on the investigator's subjective evaluation of the validity of a measuring instrument. In practice, it concerns the extent to which the researcher believes that the instrument is appropriate. Sampling validity refers to whether a given population is adequately sampled by the measuring instrument in question. In other words, it concerns whether the content of the instrument (statement, questions or indicators) adequately represent the property being measured. In practice, however, the domain of a content population is arbitrarily defined, which impairs the effectiveness of sampling validity as a test of an instrument's overall validity. Nevertheless, it does serve an important function: it necessitates familiarity with all the items of the content population (Frankfort-Nachmias and Nachmias, 1996, p.166).

To sum up, as has been pointed out by Carmines and Zeller (1994), content validity has limited usefulness in the social sciences. First, although the acceptance of the universe of content as defining the variable to be measured is essential (Cronbach, Meehl, 1955, p.282), it is exceedingly difficult to be achieved with respect to measures of the abstract phenomena in the social sciences. Second, there is no agreed-upon, well-defined, objective criteria for determining the extent to which a measure has attained content validity, hence "inevitably content validity rests mainly on appeals to reason regarding the adequacy with which important content has been sampled and on the adequacy with which the content has been cast in the form of test

items" (Nunnally, 1978, p.93). While attempts should be made to insure the content validity of any empirical measurement, it cannot be used as a fully sufficient assessment of the validity of social science measures (Carmines and Zeller, 1994, p.14).

Criterion-related validity refers to the extent to which an item or scale has an empirical association with some criterion, in other words the measure differentiates individuals on a criterion it is expected to predict (Sekaran, 1992, p.172; DeVellis, 1991, p.44). This can be established by concurrent validity or predictive validity. Concurrent validity is assessed by correlating a measure and the criterion at the same point in time if the criterion exists in the present. Predictive validity is concerned with a future criterion that is correlated with the relevant measure. As with content validity, criterion-related validity has rather limited usefulness in the social sciences simply because in many situations there are no criteria against which the measure can be reasonably evaluated. As a result, it is regarded as inapplicable to many of the abstract concepts in the social sciences (Carmines and Zeller, 1994, p.12).

Construct validity testifies the extent to which a particular measure relates to other measures consistent with theoretically derived hypotheses concerning the concepts or constructs that are being measured (Carmines and Zeller, 1994, p.15). It is most directly concerned with the question of what the instrument is, in fact, measuring (Churchill, 1995, p.534). Construct validity is assessed through convergent and discriminant validity. Convergent validity indicates the overlap between alternative measures that are intended to tap the same construct but have different sources of irrelevant, undesired variation (Judd, Smith and Kidder, 1991, p.54). Discriminant validity requires that a measure does not correlate too highly with measures from which it is supposed to differ (Churchill, 1995, p.539). In other words, discriminant validity shows that a measure fails to correlate with measures that are supposed to tap basically different constructs.

These dual types of indexes are the strongest empirical support of a measure's validity (Judd, Smith and Kidder, 1991, p.56). A construct-valid measure should correlate

with alternative measures of the same construct (ideally, with other measures that are different enough so they do not share common sources of invalidity), i.e., showing convergent validity; or fail to correlate with other measures that do not tap the target construct but that pick up expected sources of systematic error, i.e. showing discriminant validity (Judd, Smith and Kidder, 1991, p.56).

Both convergent and discriminant validity hinge on the same construct being measured. In some cases, theory may postulate that other constructs, although not identical, should be correlated, which could also serve as evidence of the construct validity (Judd, Smith and Kidder, 1991, p.57). Therefore, the construct validity of a measure can be assessed by whether the empirical relationships observed with a measure confirms or denies the theoretically postulated nomological net of the construct (Judd, Smith and Kidder, 1991, p.56; Churchill, 1995, p.538). This is known as nomological validity.

In sum, criterion-related validity and content validity have limited usefulness for assessing the validity of empirical measures of theoretical concepts in the social sciences. Partly for this reason primary attention should be focused on construct validity, which is central to the measurement of abstract theoretical concepts (Carmines and Zeller, 1994, p.14; Cronbach and Meehl, 1955, p.282). For this research, therefore, the assessment of measurement validity was focused on construct validity of the measuring instrument across cultures.

Within an individual scale, convergent validity among the items are represented by the reliability (Babin, 1994; Fornell and Larcker, 1981) and also can be supported by significant t-values (greater than twice its standard drror) associated with each indicator's estimated pattern coefficient on its posited underlying construct factor in the measurement model of confirmatory factor analysis (Anderson and Gerbing, 1988; Babin, 1994). Factor analysis can be used for assessing the validity of empirical measures (Nunnally, 1978). With factor analysis, discriminant validity is indicated by variance extracted in each factor that exceeds the square of the estimated correlation between factors (Fornell and Larcker, 1981). In addition, a phi coefficient (the

estimated correlation parameter between two estimated constructs in confirmatory factor analysis) significantly less than one offers support for discriminant validity between constructs (Anderson and Gerbing, 1988).

In cross-cultural research, standardised interview or questionnaire items are often used although there is an on-going debate on the validity and utility of some of these measures (e.g., Christie and Jahoda, 1954; Armer and Schnaiberg, 1973). Using standardised instruments allows comparisons with other data that have already been assembled, but it has a disadvantage in that the standardised instruments may not be measuring precisely what the research wishes to measure. Although this problem can be tackled by using multiple items technique, cross-cultural research poses an additional problem. Specifically speaking, a construct may have to be measured by using different culture-specific measurement items between two cultures, but how can one know that the culture-specific items are actually measuring the same construct? One solution to this problem proposed by Przeworski and Teune (1970) is to include some cross-cultural items along with the culture-specific items; in so far as the culture-specific items correlate with the cross-cultural items it is likely they are measuring the same variable.

This view point is in line with the taxonomy of cross-cultural measurement equivalence postulated by Straus (1969, p.233). According to Straus, use of the identical stimuli (i.e., questions, items) in measurement instruments in different cultures for eliciting and quantifying data (referred to as "phenomenal identity") does not necessarily result in the measurement of the same variable (referred to as "conceptual equivalence") since the stimuli may have different meanings in different cultures. Similarly, the same manifest response may not have the same meanings in different cultures. This means that phenomenal identity in measurement instruments does not necessarily produce conceptual equivalence in the measurement; and a conceptually equivalent measure need not (and sometimes cannot) be phenomenally identical. Following the criteria of phenomenal identity and conceptual equivalence, a taxonomy of measurement equivalence with four types is suggested as in Figure 4.3.

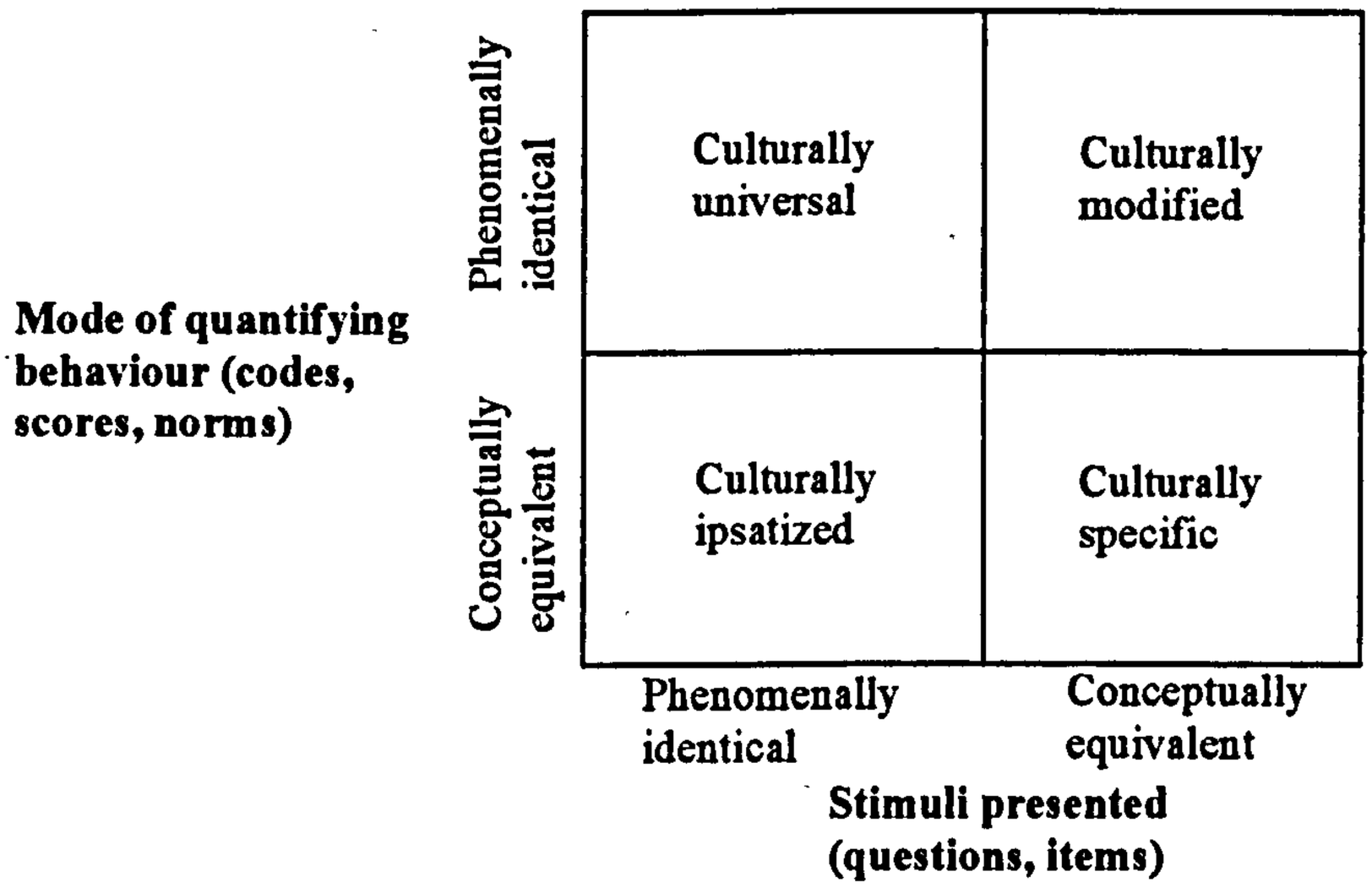

Figure 4.3 A taxonomy of measurement equivalence
(Source: Adapted from Straus,1969,, p.235)

In Figure 4.3, first, *culturally universal* measurement refers to measurements which use identical stimulus materials in each culture and record and quantify the responses in identical ways. It is apparent that there are only a limited number of instances in which culturally universal measure are available and/or applicable. Second, *culturally ipsatized* measures refer to instances in which the identical instrument is used in the several cultures under study, but the recording and/or interpretation of the resulting samples of behaviour are judged relative to others in that culture rather than relative to some universal standard of interpretation or scoring.

It is noted that a culturally ipsatized measure is automatically involved whenever the product moment correlation is used to measure relationships between variables within each culture. This is because the computational procedures for the correlation coefficient express the scores of the variables in terms of deviations from the mean of each variable. Third, *culturally modified* measures refer to measurements in which the indicators are altered to make them culturally appropriate but the original scoring is retained. Last, the culturally specific approach represents the maximum phenomenal variability in order to achieve the maximal conceptual uniformity.

It is suggested that the ideal situation is one in which both phenomenal identity and conceptual equivalence are attainable. When it is necessary to depart from phenomenal identity in order to seek conceptual equivalence, a key issue concerns the criteria for determining if there is in fact conceptual equivalence. One of the approaches to assess whether conceptual equivalence has been attained is to perform construct validation. From an operationalisation perspective, cross-cultural measures with equivalence can be achieved by restricting indicators to those which work in all the cultures under study, in which case the range of measurement may be attenuated, or alternatively, by including both "culturally specific" and "culturally universal" items (Straus, 1969, p.237; Ramsey and Collazo, 1960; Przeworski and Teune, 1966-1967). The choice of these methods with regard to this research will be discussed in detail in the section 5.2 on validation of the measurement scales used in this research.

Reliability

The reliability of a measure refers to the extent to which it is free from random error components, i.e., errors that appear inconsistently from observation to observation during any one measurement attempt or that vary each time a given unit is measured by the same instrument (Frankfort-Nachmias and Nachmias, 1996, p.170; Judd, Smith and Kidder, 1991, p.51). With a measurement defined as consisting of a true component and an error component, reliability can be defined as the ratio of the true score variance to the total variance in the scores as measured:

$$\text{Reliability} = \frac{\sigma_t^2}{\sigma_x^2} = \frac{\sigma_x^2 - \sigma_e^2}{\sigma_x^2}$$

where σ_x^2 = variance of observed scores

σ_t^2 = variance of true scores

σ_e^2 = variance of errors

By this definition it is clear that the reliability of a measure varies between 0 and 1, with 0 meaning complete unreliability (the measure produces scores that are effectively unrepeatable random numbers) and 1 meaning perfect reliability (no random error component whatever; all the items measure exactly the same thing) (Frankfort-Nachmias and Nachmias, 1996, p.171; Judd, Smith and Kidder, 1991, p.52).

Since in practice it is impossible to compute the true score independently of all the error in any particular measurement, the ratio σ_t^2/σ_x^2 has to be estimated. Among the various methods for assessing reliability, there are four common ways: the test-retest method, the parallel-form technique, the split-half method, and the internal-consistency method.

The test-retest method provides an estimate of the measure's reliability by assessing the correlation between scores on the same measure administered on two separate occasions. Being an intuitively appealing procedure, this method is not without serious problems and limitations.

First, in many situations not only it can be unduly expensive to obtain measurement at multiple points in time but it can be impractical as well. Second, it may underestimate the degree of reliability in measurement over time because a) true change in the underlying theoretical concept itself may be interpreted as measurement instability; and b) sometimes the very process of measuring a phenomenon can induce change in the phenomenon itself, which is known as "reactivity" effect; for instance, a person's attitudes measured at time 1 may have changed at time 2 only because this person has been sensitised to the subject and such change in attitudes is due solely to the earlier measurement. Third, the more typical problem of the test-retest method is overestimation due to memory, since the respondent's memory of responses during the first occasion (e.g., questionnaire or interview) is quite likely to influence the responses which the respondent gives in the second occasion, thus making the

responses appear more consistent that they actually are (Carmines and Zeller, 1994, p.29; Frankfort-Nachmias and Nachmias, 1996, p.172; Nunnally, 1964, p.85)

With the parallel-form method (also called "alternative-form method") two parallel versions of a measuring instrument are used. Both forms have similar items and the same response format with only the wordings and the ordering of questions change. It differs from the test-retest method in that the same test is not given on the second testing but an alternative form of the same test is administered for measuring the same thing. This method is regarded as superior to the test-retest method, but it has the main difficulty as to whether or not the two forms of an instrument are in fact parallel (Carmines and Zeller, 1994, p.29). Although statistical tests have been developed to determine whether the forms are parallel, researchers must still rely on their judgement when evaluating the results (Frankfort-Nachmias and Nachmias, 1996, p.172).

In contrast to the test-retest and parallel-form methods that require two test administrations with the same group of subjects, the split-half method can be conducted on one occasion, on which the total set of scale items is divided into halves and the scores on the halves are correlated and statistically "corrected" through the Spearman-Brown prophecy formula to obtain an estimate of reliability. It is noted, however, that there is a certain indeterminacy in using the split-half method to estimate reliability due to the different ways that the items can be grouped into halves (Carmines and Zeller, 1994, p.32). Specifically speaking, each split may result in a slightly different correlation between the two halves which, in turn, will lead to a different reliability estimate. In addition, the number of different splits is a function of the number of total items, therefore obtaining a consistent estimate of reliability increases as the number of items increases. For these reasons, using the split-half method is likely to obtain different reliability estimates even though the same items are administered to the same individuals at the same time.

In order to avoid the problems and limitations in the test-retest, parallel-form, and split-half methods, an alternative procedure known as internal consistency reliability

can be used. This procedure is concerned with the homogeneity of the items comprising a scale. It is based on the concept that random measurement errors vary not only over time but also from one question or test item to another within the same measure.

Assuming that (in the absence of error) all the questions or items on the measure are measuring the same construct, differences (i.e., lack of correlation) among specific items can serve as the basis for an estimate of the influence of random errors. In other words, a large random error would make scores on some individual items high and others low, reducing the item-to-item correlation; on the other hand, if random error is small, a high score on one item would go together with a high score on another, namely the items are highly correlated, meaning that each item measure the same underlying characteristic of the construct (Judd, Smith and Kidder, 1991, p.52). This means that a scale is internally consistent to the extent that its items are highly inter-correlated. High inter-item correlations suggest that the items are all measuring the same thing. Hence, a unidimensional scale or a single dimension of a multi-dimensional scale should consist of a set of items that correlate well with each other (Carmines and Zeller, 1994, p.34).

The most popular of the internal consistency estimates is given by Cronbach's coefficient alpha (Cronbach, 1951) for multipoint-scaled items, and the Kuder-Richardson formulas (Kuder and Richardson, 1937) for dichotomous items. Cronbach's alpha is derived from the correlations of each item with each other item, and ranges from 0 to 1, with 0 meaning complete unreliability and 1 meaning perfect reliability:

$$\alpha = \frac{n}{n-1}\left(1 - \frac{\sum s_i^2}{s_t^2}\right)$$

where n = number of measurements

s_i^2 = variance of measure *i*

s_t^2 = variance of the total scale formed by the sum of measures

In general, alpha is a lower bound to the reliability of an unweighted scale of N items (i.e., the reliability of a scale can never be lower than alpha even if the items depart substantially from being parallel measurement), hence in most situations alpha provides a conservative estimate of a measure's reliability (Novick and Lewis, 1967, ctd. in Carmines and Zeller, 1994, p.35). For this research, Cronbach's alpha was used as the key index for assessing the reliability of the measurement scales for each sub-sample group since it is the most widely used estimator of reliability.

Generally an alpha value above 0.70 is recommended as an acceptable minimum threshold for reliability (Nunnally, 1978; Babin, 1994), but it is also argued that lower levels are acceptable (e.g., in the range of 0.50 to 0.60) in early stages of basic research (Babin, 1994; Churchill, Jr., 1979; Nunnally, 1967; DeVellis, 1991; Robinson, Shaver and Wrightsman, 1991)[3]. Since this study is an early stage work of a basic research, alpha coefficient value of 0.50 was used as the minimum threshold.

Difference between reliability and validity:

Validity is indicated by the agreement between two attempts to measure the same trait through maximally different methods, whereas reliability is the agreement between two efforts to measure the same trait through maximally similar methods (Churchill, 1995, p.539). Validity requires reliability as a prerequisite. Reliability is a necessary but not a sufficient condition for validity. It can be said that a) if a measure is valid, it is reliable; b) if it is not reliable, it cannot be valid; and c) if it is reliable, it may or may not be valid (Churchill, 1995, p.539).

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[3] Nunnally changed his reliability recommendations for preliminary research from the range of 0.5 to 0.6 in 1967 edition of *Psychometric Theory* to the level of 0.7 in 1978 edition without explanation (Peterson, 1994). In a recent study by Peterson (1994), it is found that across the 4,286 alpha coefficients, 1,030 samples, and 832 studies investigated, the mean coefficient alpha was 0.77, seventy-five percent of the observed alpha coefficients were 0.70 or greater. However, it is argued that the reported alpha coefficients are in large measure a function of the recommendations because the recommendations have effectively become sacrosanct, although none of the recommendations have an empirical basis, a theoretical justification, or an analytical rational but only "experience" or intuition (Peterson, 1994).

Ideally, only when a measure is both reliable and valid can we confidently use its scores in research analysis (Judd, Smith and Kidder, 1991, p.51). In reality, evidence of validity may be entirely lacking in some cases, and the researcher has to evaluate the measurement instrument with respect to other characteristics such as the degree of reliability and assume its validity (Frankfort-Nachmias and Nachmias, 1996, pp.170). For the measurement scales in this research, efforts were made to assess both the reliability by Cronbach's alpha and the validity by factor analysis.

4.3.9 Data analysis methods

Since the two main measurement scales on trust and conflict were developed and tested in the American culture, the applicability of the measurement scales to this research should be assessed with the data obtained from the samples of the research cultures (justifications for this approach will be addressed in detail in the following section). First, preliminary reliability tests were carried out using Cronbach's alpha. Then exploratory factor analyses (EFAs) were used to assess the common dimensionalitiy of the measuring scales. With the preliminarily confirmation from the EFA, the common factors were used as the hypothesised models and further tested by confirmatory factor analyses (CFAs) with the multiple group LISREL[4] technique (e.g., Mullen, 1995). This approach of using EFA as a useful tool to aid in recovering an underlying measurement model which is then evaluated with CFA has recently been validated as a viable strategy for theory development and analysis (see Gerbing and Hamilton, 1997). More details about this approach will be discussed in the following sections.

The measuring scale on perceived managerial competency consisted of single items for the purpose of exploratory analysis, hence scale validation was not carried out.

For the analyses of the property-disposition relationships discussed before, methods such as structural equation modelling (SEM) or MANCOVA would serve as the ideal

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[4] LISREL stands for "Linear Structural RELations", a mathematical computer programme for structural equation modelling. In this research LISREL 7.20 (Jöreskog and Sörborm, 1989) is used.

devices for this study had the sample sizes been large enough. However, the limit of the sample sizes for Group BM_{jv} and Group CM_{jv} in the present research precluded the use of them. Instead, multi-variate regression analyses and independent *t* tests were employed for testing the hypotheses regarding SBJVs.

4.4 Cross-cultural research issues

Research in cross-cultural contexts is fraught with difficulties, mainly due to operation in a diverse socio-cultural and linguistic environments. A key concern is the comparability between data collected in different cultural contexts. Comparability in this sense is defined as "data that have, as far as possible, the same meaning or interpretation, and the same level of accuracy, precision of measurement, or reliability in all countries and cultures" (Douglas and Craig, 1983, p.131). The diversity of socio-cultural and linguistic environments implies that different behavioural and attitudinal phenomena may occur or be relevant to a specific problem. This gives rise to the first issue of whether similar research designs can be used or are relevant in different environments. This is known as the "emic-etic" dilemma in social sciences (Pike, 1966)[5].

The second issue is in regard to a number of different types of equivalence that have to be considered. These are functional, conceptual, and category equivalence of constructs, the linguistic and metric equivalence of the measurement instruments, and the equivalence and independence of samples. These issues will be addressed in the following sections.

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[5] The terms *emic* and *etic* were coined by Pike (1966) by analogy with phonemics and phonetics. The study of phonemics involves the examination of the sounds used in a particular language, while phonetics attempts to generalise from phonemic studies in individual languages to a universal science covering all languages. By analogy, emics apply in only a particular society, while etics are culture-free or universal aspects of the world (Berry 1969).

4.4.1 The "emic-etic" dilemma

The concepts of *emic* and *etic* were originally conceptualised by Pike (1966), and *imposed etic* and *derived etic* developed by Berry (1969, 1989). The emic approach holds that attitudinal and behaviour phenomena are unique to a culture, and best understood in their own terms. The etic approach is primarily concerned with identifying and assessing universal attitudinal and behavioural concepts and developing pan-cultural or "culture-free" measures (Douglas and Craig, 1983). A potential danger exists in the etic approach when the concepts and notions of researchers are rooted in and influenced by their cultural background, implying that they are working with "imposed" etics (Berry, 1969, 1989).

It is possible to change progressively the "imposed" etics to match the emic viewpoint of the culture studied. Hence shared categories can be used to build up new categories valid for both systems, leading to the formulation of "derived" etics that are valid cross-culturally (Berry, 1969, 1989; Berry, Poortinga, Segall, and Dasen, 1992). It is proposed that by deriving common features that exist in two cultures through emic research in both cultures, the derived etic aspects can provide a valid basis for comparing behaviour in the two cultures (Berry, 1989). It is on the basis of this principle that the research questionnaire for the present research adopted the received measurement scales on the two key issues of the study (i.e., interpersonal trust and styles of handling interpersonal conflicts) and the instruments were assessed and respecified for "derived etics" before being used for data analyses with regard to the focus issues.

4.4.2 Equivalence

Equivalence is an important concept and is regarded as a prerequisite for comparability in cross-cultural comparative research (Berry, 1969; Sekaran, 1983; Douglas and Craig, 1983). According to Douglas and Craig (1983), equivalence is categorised in three dimensions: construct equivalence, measure equivalence and sampling equivalence.

Construct equivalence. This dimension entails aspects of functional equivalence, conceptual equivalence and category equivalence. Functional equivalence requires the researcher to assess whether a given concept or behaviour serves the same function from one country to another. Conceptual equivalence requires the researcher to determine whether the same concepts or behaviour occur in different countries, and whether the way in which they are expressed is similar. Finally, category equivalence requires the researcher to examine whether the same classification scheme of objects can be used across countries in the study. For the present research these aspects were duly examined in the process of selecting the samples and designing the research instrument.

Measure equivalence. This requires calibration equivalence, translation equivalence, and metric equivalence. Calibration equivalence requires that in developing a research instrument, equivalence has to be established in regard to the calibration system used in measurement with the research instrument. This includes monetary and physical measurement units in verbal instruments, and other perceptual cues such as colour, shape, or form used as visual stimuli in non-verbal instruments. For the present study, translation equivalence and metric equivalence are more relevant and should be addressed in detail.

Translation equivalence requires the translation of the instrument in such a way that it is understood by respondents in different countries, and has equivalent meaning in each research context. Since translation is the stage in the research design at which the construct is defined in operational terms, it is a central issue in the establishment of construct validity, and plays a key role in the establishment of equivalence.

In the case that a research instrument is designed in English and subsequently converted in to another language, the English language is defined as the source language, and the other language as the target language. In this regard two fundamental issues arise. First, studies have shown that the quality of written English may affect the quality of translation; in other words, a written English version may translate poorly or well (Brislin; Lonner; and Thorndike 1973). Second, given the

quality of the original written language, the quality of the translation in the target language may be affected by the way the target language is written by the translator's personal preference. This is because there is no "universal rule" in translation, and many people may be fully competent in two or three languages and yet produce incredibly inadequate translations (Di and Nida, 1984). In the present study the issue under concern is the second one since the original English language of the measurement scales was kept as standard for conducting comparative studies between British and Chinese as well as America.

The establishment of equivalence was aimed at the result that the relationship of English respondents to the English questionnaire should be roughly equivalent to the relationship between the Chinese respondents and the Chinese questionnaire. This is in line with the objective of Nida's "dynamic equivalent translation" (Di and Nida, 1984, p.85). A commonly recommended procedure is "back-translation" (Werner and Campbell, 1970; Brislin, Lonner and Thorndike, 1973; Lonner and Berry, 1986). It refers to the process in which one bilingual translates from the source to the target language, and then another bilingual blindly translates back to the source language. This procedure can be repeated for several rounds. A typical procedure is depicted in Figure 4.4.

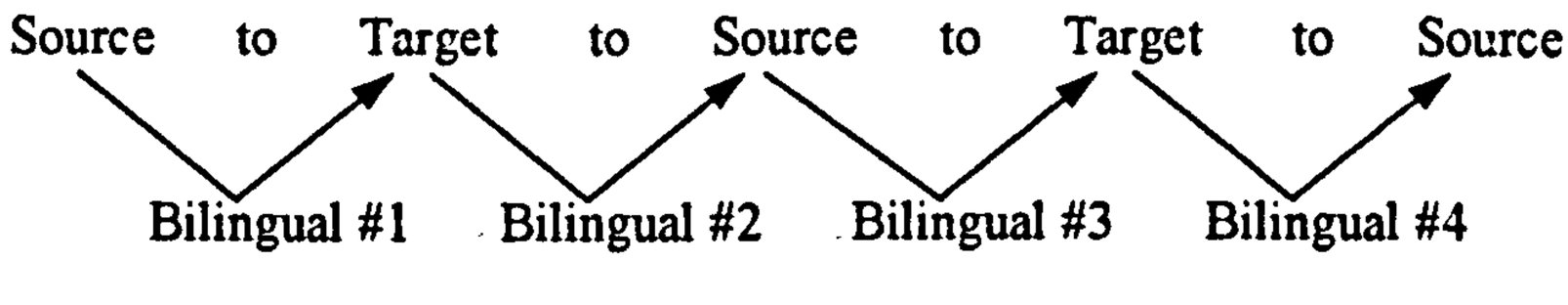

Figure 4.4 Back-translation proceure

(Source: Adopted from Lonner and Berry, 1986)

This process of moving back and forth between languages is known as "decentering", since no one language is the "centre" of attention. The last back-translated version and the original version are compared and differences in meaning noted. If a concept can "survive" this procedure, it is assumed to be etic, since there must be readily available words and phrases in the two languages which the translators could use. If a concept is not in the final back-translated version, the reason could be that it is emic, which means the concept might be readily expressible in only one of the languages. In this case there should be extensive discussions with the bilinguals who can identify reasons why some messages are and are not translatable. It may result in modifying the source language wording or the translated target language wording. "The major advantage of back-translation is that it gives researchers some control over the instrument development stage since they can examine original and back-translated versions and make inferences about the quality of the translation" (Lonner and Berry, 1986).

The above procedures are based on the assumption that researchers rarely know the target language well enough to do their own translations (Lonner and Berry, 1986). When the researcher is a bilingual, which is the case in the present study, this process can be modified with focus on the evaluation of translation quality and equivalence. This is in line with the argument by Lonner and Berry (1986) that "even researchers who are native speakers, because of the large number of years they have devoted to their formal education, may use phrases which are unfamiliar to the sample of respondents".

In assessing translation, a major difficulty is the lack of an ultimate criterion of translation quality. However, a basic principle was suggested for evaluation of translation. This is what is known as "dynamic equivalent translation", which means to provide a translation which can be so well understood by receptors of the target language text that they can fully appreciate how the original receptors responded to the original text. In other words, such a translation is to produce a similar response (in a semantic sense) on the part of readers of a source and target version (Nida, 1964; Di and Nida, 1984).

Brislin, Lonner and Thorndike (1973) recommended some procedures to evaluate the quality of translation and equivalence:

> "Have several raters examine the original, target, and /or the back-translated versions for errors that lead to differences in meaning (meaning errors). If possible, have other raters demonstrate translation adequacy, administer the materials to bilingual subjects, some who see the English version, some who see the translation, and some who see both. Responses should be similar across groups, as assessed by means, standard deviations, and correlation coefficients. Report experience using the different criteria for equivalence. Determine the verdict of translation adequacy derived from the meaning error standard and a simple pre-test, and compare it with the verdict derived from the more formal and time-consuming administration to subjects. If the verdict is the same for many research projects, future research might only demand the simpler meaning error standard and pre-test."

In line with the above, a "systematic back-translation process" was used for the questionnaire in this research. The procedure is demonstrated in Figure 4.5.

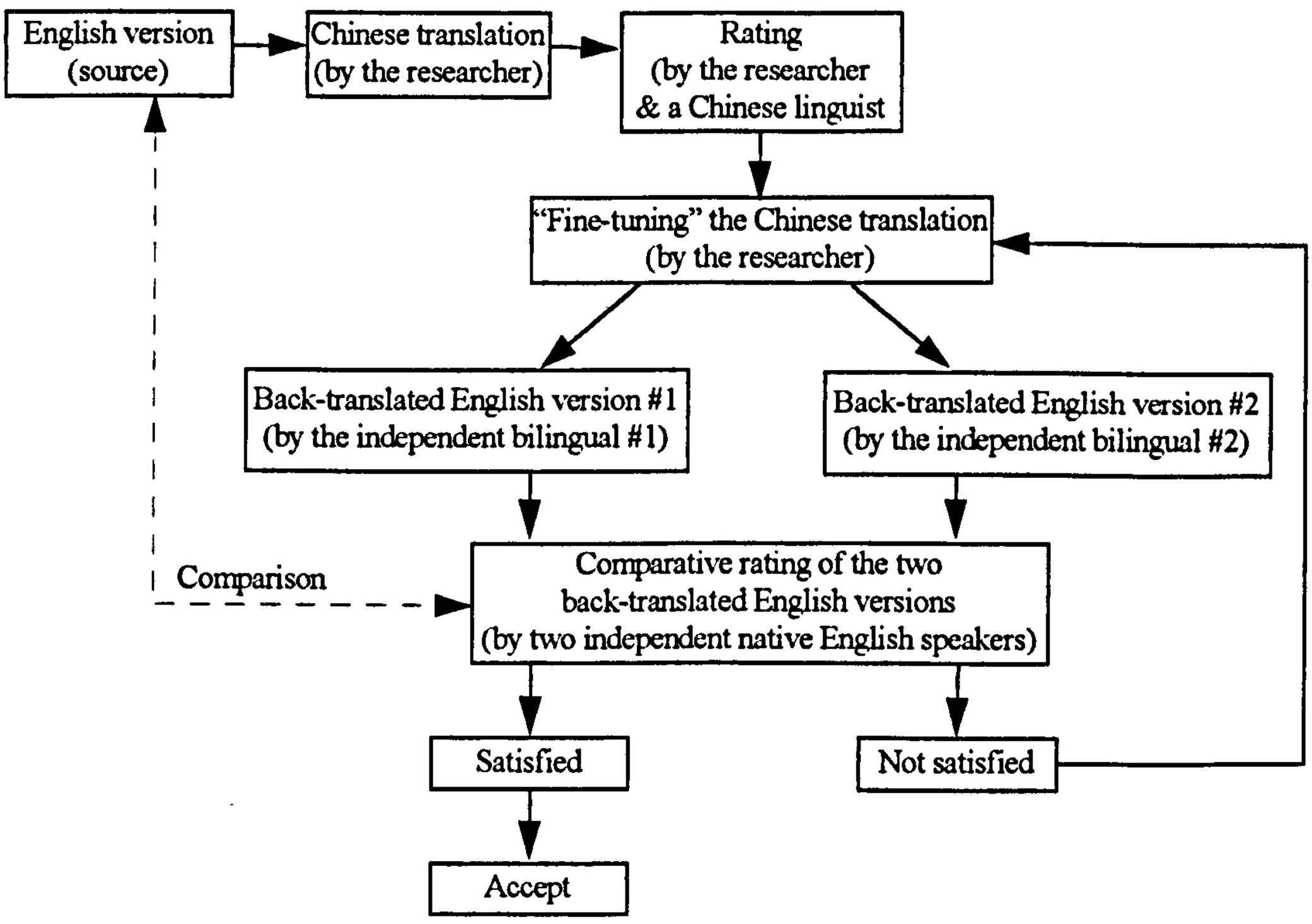

Figure 4.5 A systematic back-translation process

Metric equivalence refers to the psychometric properties of data that exhibit the same coherence or structure across multiple groups (Mullen, 1995). It involves two aspects: the first is the specific scale or scoring procedure used to establish the measure; the second, the equivalence of response to a given measure in different countries. In terms of the first aspect, it depends essentially on familiarity with different scales and scaling procedures (Douglas and Craig, 1983). While it is apparent that a five-point scale is commonly used in English speaking countries, a literature review of studies on issues about China has suggested that a five-point or seven-point scale is commonly used and has achieved valid data (e.g., Baird, Lyles, Ji. and Wharton, 1991).

The second aspect relates to scalar equivalence, i.e., whether the scores obtained from respondents in different countries have the same meaning and interpretation. Differences in scores may due to cultural characteristics such as social desirability, acquiescence, evasiveness, or humility (Vijier and Poortinga, 1982). Differences in response style (e.g., extreme response bias, yea-saying and nay-saying bias, etc.) have been found to differ from country to country (e.g., Douglas and Craig, 1983). These sources of differences may add systematic error to measurements and threaten their validity for cross-cultural comparison (Mullen, 1995).

Metric equivalence can only be examined after the data have been collected. Several diagnostic approaches have been suggested in the literature (e.g., Mullen, 1995). For the present research the CFA with LISREL ("Multiple Group LISREL" in Mullen's term) was employed. This approach is regarded appropriate for comparing measurement models from mutually exclusive sub-sample groups that are clearly differentiated (Jöreskog and Sörborm, 1989), which is the case in the present research. When using measurement scales with groups from different cultures, this method is "a theoretically appealing way to explore whether the respondents relate observed measures to latent constructs the same way in different populations" (Mullen, 1995). This method will be described in detail in Chapter 5.

Sampling equivalence. This issue concerns the comparability of samples drawn from different countries (Douglas and Craig, 1983). In this regard two aspects are involved: the choice of the sampling unit and the extent to which the samples can be considered to be independent and representative of the population (Douglas and Craig, 1983; Malhotra, 1996).

In terms of the first aspect, an appropriate approach for sampling equivalence for the present study is to obtain matched-dyads, i.e., a response from the British manager and the Chinese manager in the same SBJV (see Johnson, Cullen, Sakano and Takenouchi, 1996, p.990) since this study examines several key issues involved in the working relationships between British and Chinese managers at the inter-person level. With the SBJVs as the sampling units, each respondent was asked to provide information about a counterpart from another country (e.g., UK or China) who was involved in the same SBJV. While more time-consuming and adding to operational complexity, obtaining data from several respondents from each of the SBJVs who were matched to the extent that they were involved in the working relationship in the same SBJV has provided a more complete and accurate basis for data collection and analysis (see Douglas and Craig, 1983).

In terms of the second aspect, in order to achieve the maximum extent to which the sample is representative of the population of interests, subjects in this study were chosen from those who were directly involved in the process of decision making and operation of the collaborative operations. In addition, various advanced statistics techniques (explained in the relevant sections) were used to evaluate the validity and reliability of the data.

4.5 Establishing cross-cultural comparability

4.5.1 From "imposed etics" to "derived etics"

As discussed in section 4.4.1, a potential danger exists in the etic research approach in cross-cultural research when the concepts and notions of researchers are rooted in and

influenced by their cultural background, implying that they are working with "imposed" etics (Berry, 1969, 1989). To overcome this problem, it is suggested that the "imposed" etics should be progressively changed to match the emic viewpoint of the culture studied. Hence shared categories across cultures can be used to build up new categories valid for both systems, resulting in the formulation of "derived" etics that are valid cross-culturally (Berry, 1969, 1989; Berry, Poortinga, Segall and Dasen, 1992).

It is proposed that by deriving common features that exist in two cultures through emic research in both cultures, the derived etic aspects can provide a valid basis for comparing behaviour in the two cultures (Berry, 1989). This process is represented in Figure 4.6.

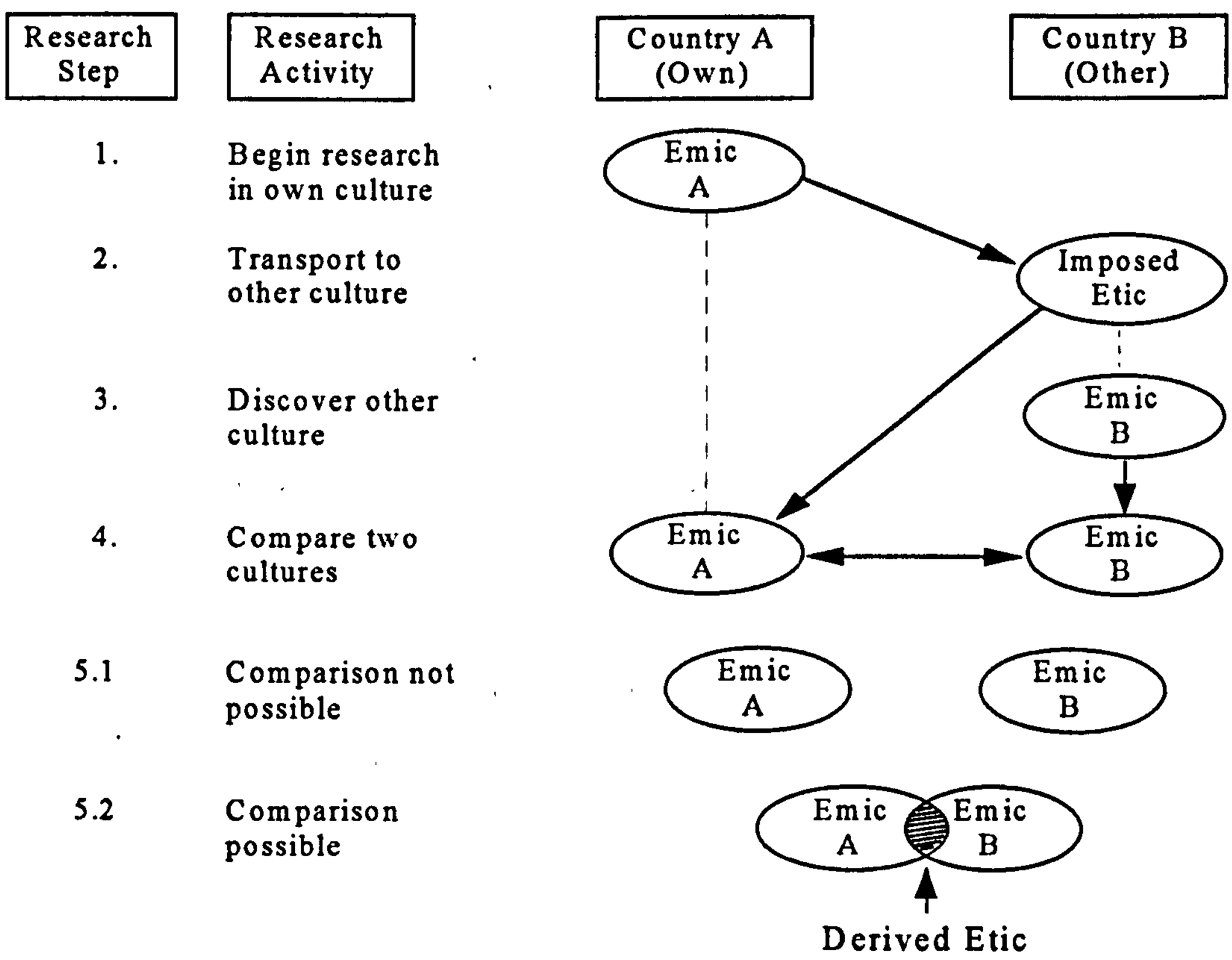

Figure 4.6 The operationalising of derived etics.
(Source: Adapted from Berry, Poortinga, Segall, and Dasen, 1992, p.234)

The progression from "imposed etics" to "derived etics" exhibited in Figure 4.6 may be better summarised by quoting Berry, Poortinga, Segall and Dasen (1992, p.233) as follows:

> "Researchers will typically start with an imposed etic. They will scrutinise their conceptions and methods for culture appropriateness and modify them in an emic phase. When the investigation is successful, they will end up with a modified or derived etic in terms of which valid comparisons can be made, at least across the cultures concerned. Extension of the research will ultimately lead to so much evidence that it can be reasonably concluded that a psychological characteristic is universally present."

This research has followed from the principle of the "derived etic" approach. The two measurement scales were originally developed in the American culture. After testing and re-testing with large samples and rigorous statistical techniques, they have been proved of high reliability and validity in the original culture. However, the transferability of US-generated measures to other cultures has been questioned in the literature (Sekaran, 1983, p.63). Despite their mono-cultural origin (i.e., "emics"), as a stepping device for achieving derived etics they can be applied in another culture (i.e., "imposed etics") for testing, firstly, its reliability and validity in another cultural environment, and secondly, for comparative analysis if they can be justified for validity and reliability (possibly with modifications). If "common core" features can be identified with reliability and validity, cross-cultural equivalence of the measurement of the constructs can be established, hence the data obtained with the validated measurement can be justified for comparing the "comparable" (common features), with the "incomparable" being dropped out. On the basis of Berry, Poortinga, Segall and Dasen's model (Figure 4.6), this process can be conceptualised in Figure 4.7.

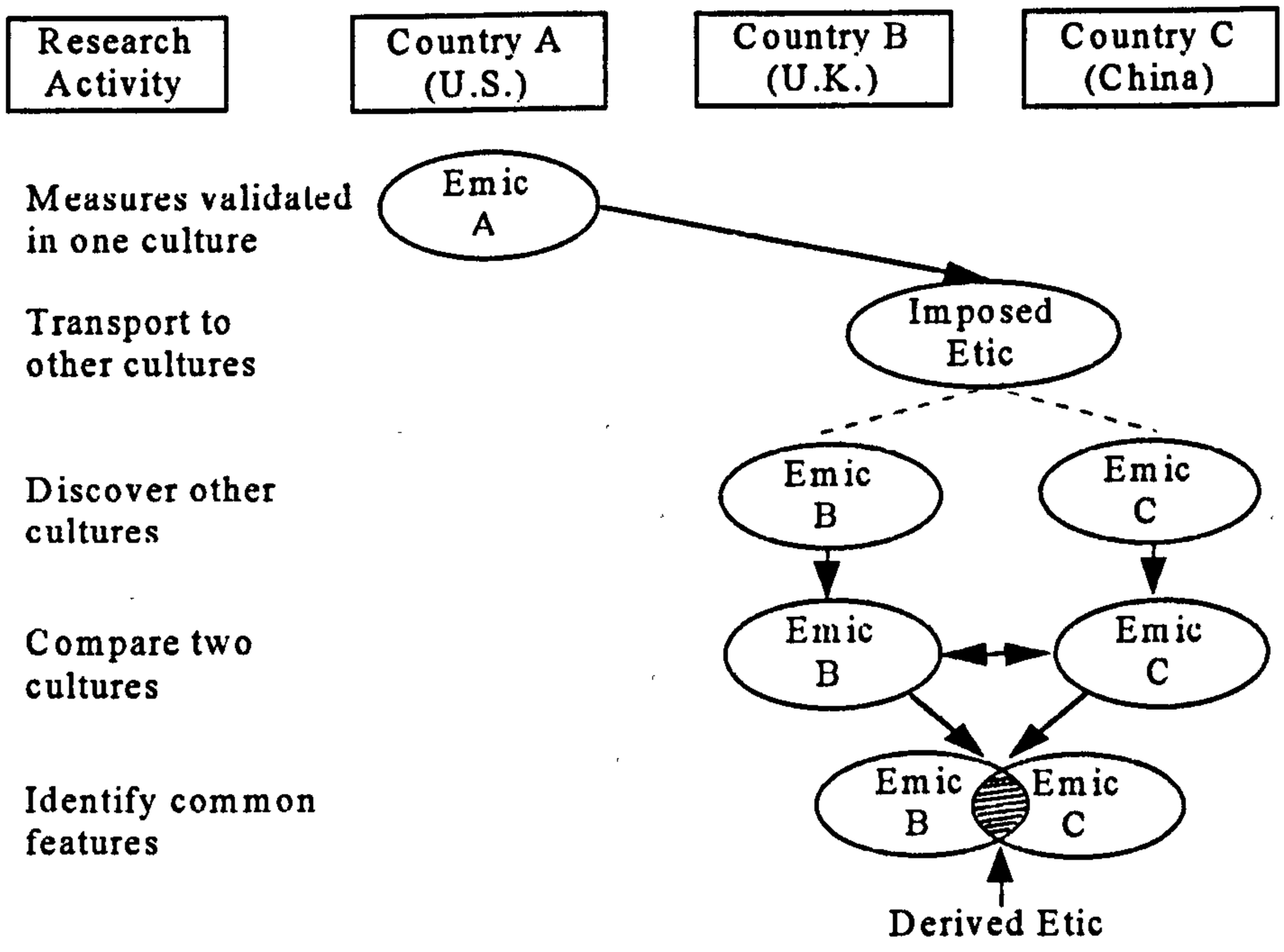

Figure 4.7 "Derived etic" approach for purifying measurement instrument
(Source: Based on Berry, Poortinga, Segall, and Dasen, 1992, p.234)

Following the strategy of progressing from "imposed etics" to "derived etics", the instruments were first treated with back-translation for the Chinese sub-samples before the data were gathered. To test for the cross-cultural equivalence of the measurement instruments for the present research, they were applied as "imposed etics" for testing for their reliability and validity with Group BM and Group CM, whose sample sizes would suffice for such evaluation through EFAs and CFAs with the multiple group LISREL technique. The resulting modified measurement scales represent the instruments with "derived etics". Further analyses were then based on the data from the "derived etic" instruments with viable comparability across the two cultures.

4.5.2 Factor similarity: EFAs

Factor analytic techniques are employed to assess the measurement scales for the present research. The nominal objective is to investigate the measurement invariance of data on inter-personal trust and styles of handling inter-personal conflicts gathered from the British and Chinese samples (Group BM and Group CM, respectively). The practical goals are to establish "derived etic" measures that are not imposed but derived from the common features from the sample groups, which incorporate scale items with measurement invariance across the two cultures, hence provide cross-culturally valid measurement scales for the further comparative analysis.

In any comparative analysis, an essential ingredient is a variable that forms a scale with identical or invariant scale properties for the persons or groups to be compared. Such an identical scale in most cases is an unobservable variable or a hypothetical construct, and is called a *comparison scale*. Given the various forms of the source of information pertinent to the variable of interest (e.g., data obtained by tests, questionnaires), the information is expressed on a scale that is called a *measurement scale*. For a cross-cultural comparison to be possible, the relationship of the measurement scale in each group with the comparison scale that is of interest must be identified. It is postulated that "data are equivalent when an observed cross-cultural difference on a measurement scale is matched by a corresponding difference on the comparison scale" (Poortinga, 1989, p.738).

An instrument that is constructed within a particular cultural environment is likely to be idiosyncratic (Poortinga, 1989, p.751). Questions have been raised in the literature with regard to the transferability of measures generated in one culture to other cultures (e.g., Sekaran, 1983, p.63). Several empirical analytical techniques are available for assessing equivalence for comparison between groups, of which factor analysis is the most frequently used. One method is EFA, by which data can first be analysed separately for each cultural group, and then the matrices of factor loadings are either visually inspected for similarities, or they are compared by means of some

statistical procedure (e.g., the five methods summarised and discussed by Cattel, 1969, 1978).

It is observed, however, that either approaches have advantages and shortcomings. The subjective inspection method does not provide a sharp discrimination between similar and dissimilar matrices, and some of the formal procedures can also result in numerically high coefficients of similarity even when substantial differences exist between the matrices (Bijnen, Net, Poortinga, 1986). In addition, although EFA identifies items that tend to covary relative to other factors, it does not address correlated measurement error or provide tests of statistical significance or goodness of fit (Alwin and Jackson, 1980, ctd. in Miller, Slomczynski, and Scholenberg, 1981, p.181).

Given the various viewpoints on EFA, a most recent Monte Carlo study (Gerbing and Hamilton, 1997) has provided empirical evidence for the comparative advantages that support the use of EFA as a precursor to CFA. Basically, the EFA starts with no model specification other than perhaps the number of factors, and the procedure extracts the factors and then rotates the solution to achieve a more meaningful interpretation. According to Gerbing and Hamilton's findings, EFA's lack of a priori specification becomes a relative strength when the underlying structure of the measure (e.g., indicators) is not well understood. It is suggested that "because well-fitting models are almost always constructed from both theory and data, effective heuristic strategies for data driven model respecification are needed by the substantive researcher" (Gerbing and Hamilton, 1997). In the present research, the hypothesised theoretical structure of the conditions of inter-personal trust and the styles of handling inter-personal conflict were not tested before in the British and Chinese cultures. Therefore, it is considered plausible for the present study to start with EFA as a heuristic device to construct measurement models that can be subsequently validated with CFA.

4.5.3 Factor invariance: CFAs

The relatively recent introduction of CFA has provided a more promising analytic procedure which can be used to compare the equivalence of factor structures in different cultures (Poortinga, 1989, p.746; Watkins, 1989, p.688). A comparison of exploratory and confirmatory factor analytic approaches to measurement invariance is summarised by Marsh and Hocevar (1985, p.565) as follows:

> "Jöreskog and Sörbom's confirmatory factor analytic approach to factorial invariance has several advantages over the more widely use exploratory factor analytic (EFA) techniques. First, EFA is typically conducted with correlation matrices, which makes comparing the parameters across samples problematic, whereas CFA is performed on covariance matrices. Second, CFA provides a chi-square test and goodness-of-fit indicators of the ability of the same factor solution to fit data from different sample; no such test is available for EFA. Third, CFA allows the researcher to formulate a specific model and test the invariance of specific parameters in the factor solution, whereas the researcher has relatively little control over the model to be tested in EFA."

It is argued that issues of factorial invariance are not adequately addressed by using EFA (Alwin and Jackson, 1981), and CFA analytic model through LISREL provides a methodologically more sophisticated approach to testing for the equivalence of the measurement and the structure of the underlying construct across cultures (Byrne, Shavelson and Muthén, 1989, p.456). However, in addition to the comparative advantage of using EFA as a precursor to CFA, a practical reason to conduct EFA before CFA is to provide preliminary scales that can subsequently be tested and refined with LISREL, hence to make the LISREL analysis more manageable (Gerbing and Anderson, 1988; Steenkamp and Trijp, 1991). Moreover, it is argued that the data-driven model respecification by CFA are more appropriate for "fine tuning" of the model than for large-scale respecification of severely misspecified initial models (see Gerbing and Hamilton, 1997).

In cross-cultural research, a key issue that has motivated much research and debate is how to establish measurement (or factorial) invariance, i.e., test scores for individuals

who belong to different examinee populations are comparable on the same measurement scale (Reise, Widaman and Pugh, 1993, p.552). In many comparative studies it is generally (and implicitly in many cases) assumed that such measurement invariance exists across groups (Drasgow, 1984, 1987). This can be attributed to one major fact: if measurement scores are not comparable across groups, "differences between groups in mean levels or in the pattern of correlations of the test with external variables are potentially artifactual and may be substantively misleading" (Reise, Widaman and Pugh, 1993, p.552). Such assumptions have been questioned as problematic with both random and non-random sampling (Marsh and Hocevar, 1985, p.564).

SEM provides tests of the theoretical structure of the measurement instrument (i.e., the relationship of the construct with its measure) and the relationships between the construct and other constructs without the bias that the measurement error introduces (Steenkamp and Trijp, 1991, p.284). Specifically, through using multiple-indicators, the SEM model can estimate the effects of measurement error, and estimate the regression coefficients between the true latent variables while taking the measurement error into account (Jaccard and Wan, 1996, p.6).

A further methodological criticism is the temptation to make cross-cultural comparison of scores once a construct is validated by the researcher's favourite method (Hui and Triandis, 1985, p.149). To avoid this pitfall, a multi-method approach was used in this research. As suggested by Hui and Triandis (1985, p.149), this approach is akin to the notions of conceptual replication and multiple operationalism (Campbell and Fiske, 1959) that emphasised the need for a variety of operationalisations and methods to achieve validity in measurement and experimentation.

The multi-method approach employed in this research has followed from those in the literature (e.g., Gerbing and Hamilton, 1997; Hair, Anderson, Tatham and Black, 1995, p.388; Hui and Triandis, 1985, p. 149; Miller, Slomczynski and Schoenberg, 1981, p.181; Poortinga, 1989, p.745; Watkins, 1989, p.688;). First, the measurement

instrument was improved by the back-translation process with amelioration by the researcher (i.e., the systematic back-translation process). Second, EFAs were employed to establish conceptual/functional equivalence as well as instrument (constructs as operationalised) equivalence. This was meant to evaluate the proposed dimensionality and appropriateness of the selected items in the research instrument by identifying structural similarity of factors common to British and Chinese cultures. Finally, the results were validated by the CFA through SEM using LISREL for testing factorial invariance of the measurement instrument.

4.6 Conclusion

In this chapter the methodologies used in the present research were introduced and various justifications discussed. To minimise the bias from measurement of latent variables, adequate caution was taken throughout the research process. Data collection was based on the questionnaire survey administered with the same procedures in both UK and China (cf. Sekaran, 1983; Sekaran and Martin, 1982). The principle of searching cross-cultural comparability with "derived etic" was adopted as the foundation of the methodology. To evaluate the research instruments (CTI and ROCI-II), both EFAs and CFAs were adopted for the analyses. Multiple regression analyses and independent *t* tests were assumed as appropriate for the present research because of the limit of the sample sizes. Descriptive analysis was proposed for analysing the data on the managerial role perceptions.

CHAPTER 5 DATA ANALYSES AND HYPOTHESES TESTING

5.1 Introduction

This chapter presents empirical data analyses and deals with testing of the hypotheses. For the sake of clarity, theoretical implications of the findings are discussed following the data analyses in each section. The analyses are concerned with the following key issues and organised in four sections:

a) the conditions of inter-personal trust (section 5.2);
b) the styles of handling inter-personal conflict (section 5.3);
c) the perceived characteristics of managerial competency (section 5.4);
d) the managerial role expectations (section 5.5).

In section 5.2, analyses are first presented with regard to the evaluation of cross-cultural equivalence of the CTI by EFA and CFA with the multiple group LISREL technique with the two large sub-samples (Group BM and Group CM). In these analyses an attempt was also made to identify the significant factors that affect the overall level of inter-personal trust with the data from the two large groups.

For the analysis to identify the significant factors that affect the overall level of trust between British and Chinese managers in SBJVs, the ideal technique would be LISREL (or MACOVA) mainly because, as will be discussed later, the factors of the conditions of trust were not strictly orthogonal. However, the ratio between the number of the measure items in the scales and the effective sample sizes of the two groups do not permit reliable results from such analyses. Taking into account the construct equivalence of measurement scales (CTI) validated by EFA and CFA, multiple regression analysis was employed for the analyses[1]. Details are provided in this section with regard to the multiple regression analyses with the respecified CTI measure instrument with the two sub-samples of Group BM_{jv} and Group CM_{jv}.

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[1] This choice was made in consultation with Professor Richard Bagozzi of University of Michigan, USA. A discussion that justifies this approach can also be found in Singh (1995).

Following from the regression analysis, comparative analyses are described with regard to the differences in mean scores based on independent *t*-tests between Group BM and Group BM_{jv}, between Group CM and Group CM_{jv}, and between Group BM_{jv} and Group CM_{jv}.

With a similar approach, section 5.3 describes the evaluation of cross-cultural equivalence of the measurement instrument of styles of handling inter-personal conflict (ROCI-II) with EFA and CFA with the two large samples (Group BM and Group CM). Then comparative analyses are presented with regard to the differences in the styles of handling inter-personal conflict between the four sub-sample groups based on the respecified measurement instrument of ROCI-II.

In section 5.4, analyses are described with regard to managerial competency. The analyses were conducted in a comparative fashion with independent *t*-tests of differences in mean scores on each of the characteristics of managerial competency perceived between Group BM_{jv} and Group CM_{jv}.

Section 5.5 discusses the issue of managerial role expectation between British and Chinese managers. An exploratory and qualitative analysis was employed based on the interviews conducted in the pilot survey. This follows the previous analyses because the methodology employed was qualitative and not hypothesis testing.

The analytical processes described above and the samples used in each analysis are illustrated in Figure 5.1. The samples of Group BM and Group CM are illustrated by the two larger shaded circles. The two smaller shaded circles illustrate the samples of Group BM_{jv} and Group CM_{jv}. The three shaded squares in the centre illustrate the focuses of the analyses.

The tests of the cross-cultural measure equivalence of CTI and ROCI-II are indicated by the shaded square on the top, and the characteristic of the analysis is indicated by the label "cross-cultural comparison" below it. A double-arrow line links "Group BM" and "Group CM" to indicate that the two samples were used for the analysis. In

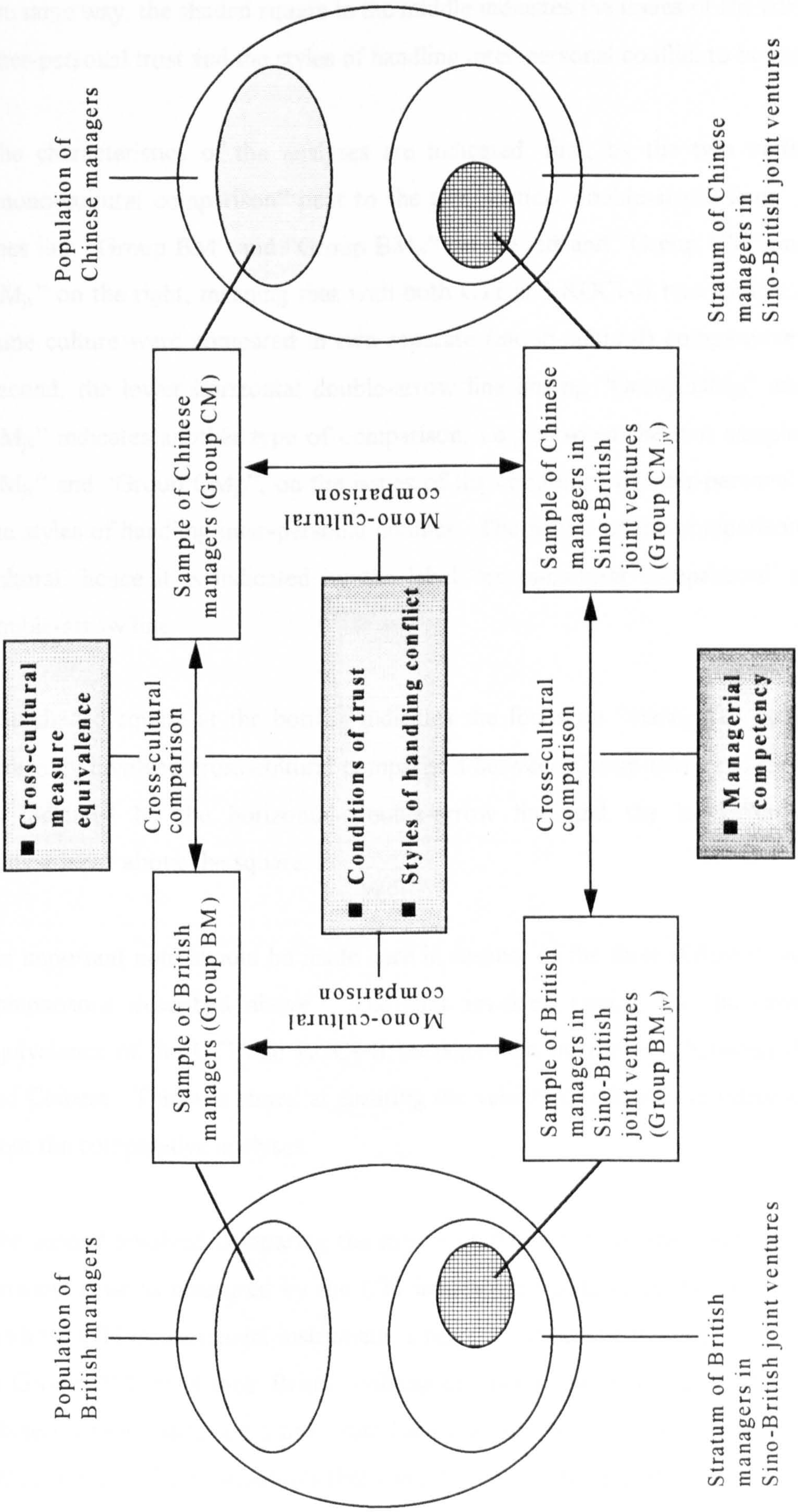

Figure 5.1 The comparative analyses design and the structure of the samples

the same way, the shaded square in the middle indicates the issues of the conditions of inter-personal trust and the styles of handling inter-personal conflict to be analysed.

The characteristics of the analyses are indicated, first, by the two vertical labels "mono-cultural comparison" next to the two vertical double-arrow lines. The two lines link "Group BM" and "Group BM_{jv}" on the left and "Group CM" and "Group CM_{jv}" on the right, meaning that with both CTI and ROCI-II two samples from the same culture were compared in two separate (mono-cultural) comparative analyses. Second, the lower horizontal double-arrow line linking "Group BM_{jv}" and "Group CM_{jv}" indicates another type of comparison, i.e., between the two samples "Group BM_{jv}" and "Group CM_{jv}", on the issues of the conditions of inter-personal trust and the styles of handling inter-personal conflict. The nature of the comparison is cross-cultural, hence it is indicated by the label "cross-cultural comparison" above the double-arrow line.

The shaded square at the bottom indicates the focus on "managerial competency". This only involved cross-cultural comparison between Group BM_{jv} and Group CM_{jv}, as indicated by the horizontal double-arrow line and the label "cross-cultural comparison" above the square.

An important note should be made here in respect of the three different types of the comparisons described above. The first involved testing for the cross-cultural equivalence of the CTI and ROCI-II measurement instruments between the British and Chinese. This was aimed at ensuring the validity of substantive inferences drawn from the comparative analyses.

The second involved comparing the means of the factors of the conditions of inter-personal trust as measured by the CTI instrument validated in the first comparison. With the CTI measurement instrument, a respondent rated a target person (e.g., those in Group BM rated their British colleagues, and those in Group BM_{jv} rated their Chinese counterparts) on a five-point Likert scale in reference to this target person's behaviour in different situations that were relevant to the establishment of trust in the

target person by the respondent. The target person's behaviour was rated as perceived by the respondent according to the construct factors categorised by the CTI measurement instrument, i.e., "availability", "competence", etc.

A fundamental question in an enquiry into inter-personal trust in cross-cultural working relationships is whether the conditions leading to inter-personal trust are different between people of the same culture (mono-culture) working in their home country and people from different cultures (cross-culture) working in a joint venture. In this research context, this type of comparison focused on examining whether the British managers would perceive their British target persons (i.e., colleagues in a British organisation in the UK) as exhibiting different behaviours as compared with the perceived behaviours exhibited by the Chinese counterparts in SBJVs. To achieve this objective, the logic of such comparison was based on the "non-equivalent control group design" (Frankfort-Nachmias and Nachmias, 1996, p.133; Judd, Smith and Kidder, 1991, p.107) in the social sciences (see Table 5.1).

Table 5.1 The logic of non-equivalent control group design

Samples	Pre-test	Treatment	Post-test
Group 1 (e.g., Group BM)	O_1	not-X	O_2
Group 2 (e.g., Group BM_{jv})	O_3	X	O_4

Sources: Based on Frankfort-Nachmias and Nachmias (1996) and Judd, Smith and Kidder (1991).

In Table 5.1, the two (or more) groups were formed with subjects assigned to each group not randomly, but either naturally or for some reasons. Then observations (O_i) were made on the two groups who were introduced to a pre-test and a post-test, with one (comparison) group exposed to a treatment (X) and the other (control) group not exposed to the treatment (not-X). Significant differences in the post-test observations between the two groups would imply that the treatment had an impact on the knowledge, attitudes or behaviour revealed by the comparison group. This design is regarded as effective in drawing inferences on causal relations between variables in quasi-experimental and survey research.

Analogous with such research design, Group BM and Group BM_{jv} were taken as the control group and comparative group respectively in this research. The data obtained from Group BM was regarded as from the observations in a "pre-test" (O_1). An important assumption was made here with regard to the observations in the "pre-test" for Group BM_{jv} (O_3): it was assumed that if the subjects in Group BM_{jv} had rated their British colleagues in their parent companies in the UK as measured by CTI, they would have exhibited perceptions that were not significantly different from the perceptions revealed by Group BM. In other words, although Group BM_{jv} was not really introduced to a (so-called) "pre-test", it was assumed that the two groups would have shown identical observations ($O_1 = O_3$) if Group BM_{jv} was introduced to such a test. This assumption was made because in reality it was almost impossible to manipulate the samples in this research context. Although making such an assumption was not the "first best" choice, it was judged tenable because all the subjects in the two groups were identified as from the population of British managers who were employed by British companies. Nevertheless, caution has been taken in interpreting the results because of the imperfect context in which the "non-equivalent control group design" was applied.

Given the above assumption, the data from Group BM_{jv} were treated as the observations (O_4) resulting from rating different target subjects (their Chinese counterparts in the joint ventures), i.e., "treatment" (X), in a "post-test". Since Group BM was not involved in joint ventures, the "post-test" observations remained the same with those in the "pre-test" (i.e., $O_1 = O_2$). Accepting this, comparisons can be made between O_4 and O_2. This was operationalised by comparing the means of Group BM and Group BM_{jv}. As a result of the constraint in applying this type of research design, no causal inferences were drawn from such comparative analysis in a strict sense. It was regarded appropriate to infer at least whether different conditions were needed to build trust when, for example, for a British manager the colleague was no longer a British but a Chinese in a SBJV. This analytical logic applies in the same way to the samples of Group CM and Group CM_{jv}.

The third type of comparison was based on "static-group comparison design" (or "contrasted groups designs") used in survey research in the social sciences (Frankfort-Nachmias and Nachmias, 1996, p.132; Judd, Smith and Kidder, 1991, p.105). The logic of this design is straightforward: intact comparison groups are used either at the pre-test phase only or at the post-test phase only. In the present research, this type of comparative analysis was used to assess the differences between the conditions of inter-personal trust as perceived between British and Chinese managers on each other in SBJVs. This was accomplished by comparing the mean differences between Group BM_{jv} and Group CM_{jv}.

With regard to the issue of styles of handling inter-personal conflict, the measurement instrument ROCI-II was used by the respondents to give self-assessments on the five dimensions of the styles of handling inter-personal conflict. Both "non-equivalent control group design" and "static-group comparison design" were used to examine whether the self-reported styles of handling inter-personal conflict would be different:

a) between British and Chinese managers in their home-country organisations;

b) between British managers and Chinese managers in SBJVs;

c) between the British managers in British organisations in the UK and the British managers in SBJVs; and

d) between the Chinese managers in the Chinese organisations in China and the Chinese managers in SBJVs.

The "static-group comparison design" was used for comparing mean differences between Group BM and Group CM and between Group BM_{jv} and Group CM_{jv}; the "non-equivalent control group design" was used for comparison between Group BM and Group BM_{jv} and between Group CM and Group CM_{jv}.

In the third section, the issues of managerial competency were examined by static-group comparison, since the characteristics of managerial competency were measured by the single-item measurement instrument and they were assessed by the respondents in Group BM_{jv} and Group CM_{jv} on each others.

As discussed in the previous chapter, the use of convenience samples in the present research is regarded valuable as far as the characteristics of the samples are described so that necessary details of the samples are available for other researchers to either replicate the research or evaluate the plausible rival hypotheses that may threaten the study's validity (Brislin and Baumgardner, 1971). Following the recommended approach (Brislin and Baumgardner, 1971), the profiles of Group BM and Group CM are provided in Table 5.2; the profiles of Group BM_{jv} and Group CM_{jv} are provided in Table 5.3.

In Tables 5.2 and 5.3 "Counter-cultural experience" refers to the experience of the counterpart's culture between British and Chinese managers in Group BM_{jv} and Group CM_{jv}. This is approximated by the total number of months involved in face-to-face contact with people from and staying in the counterpart's country. "Experience in international collaborative projects" refers to the respondents' experience with international collaboration, including Sino-British collaboration. This is approximated by the total number of months involved in Sino-foreign collaborative projects (including Sino-British projects) in China.

As Table 5.2 reveals, Group BM and Group CM included respondents with an adequate range of representative backgrounds. About half of the respondents from both groups received higher education. Both groups represented a wide range of industrial sectors except textile and electricity in Group BM and finance and accountancy in Group CM. The respondents represented organisations ranging from small (less than 250 employees) to large sizes (over 10,000 employees). It is noted that Group BM included female respondents about 5 times more than the female Chinese respondents in Group CM. About half of the Chinese respondents were at top management level, while only about 23% of British respondents were at top level.

Table 5.3 shows that a majority of the respondents from Group BM_{jv} and Group CM_{jv} were from SBJVs: 70% British respondents and 80% Chinese respondents were from equity joint ventures. This was judged as adequately representative of SBJVs based on the sampling frame for the present research. The average experience in

Table 5.2 Profiles of Group BM and Group CM

	British (Total n=139)		Chinese (Total n=235)		Kolmogorov-Smirnov Test
Gender	Count	% (n=138)	Count	% (n=227)	
Male	87	63.0%	210	92.5%	$\rho < .000$
Female	51	37.0%	17	7.5%	
Age	Count	% (n=138)	Count	% (n=233)	
29 and below	29	21.0%	25	10.7%	$\rho > .100$
30-39	55	39.9%	106	45.5%	
40-49	38	27.5%	71	30.5%	
50-59	16	11.6%	30	12.9%	
60 and above	0	0.0%	1	.4%	
Degree/Qualification	Count	% (n=137)	Count	% (n=227)	
Lower than graduate	36	26.3%	124	54.6%	
Graduate	49	35.8%	93	41.0%	$\rho < .000$
Post-graduate	19	13.9%	8	3.5%	
Professional qualification	4	2.9%	-	-	
None	29	21.2%	2	.9%	
Job level	Count	% (n=137)	Count	% (n=231)	
Top level (GM, MD)	32	23.3%	125	54.1%	$\rho < .000$
Middle level (Dept. M.)	58	42.3%	62	26.8%	
Lower level	47	34.3%	43	18.6%	
Business area	Count	% (n=136)	Count	% (n=229)	
Machinery	1	.7%	12	5.2%	
Chemistry	1	.7%	67	29.3%	
Metallurgy	1	.7%	3	1.3%	
Textile	-	-	13	5.7%	
Manufacture	17	12.5%	4	1.7%	
Automobile	4	2.9%	4	1.7%	
Electricity	-	-	49	21.4%	
Electronics	10	7.4%	14	6.1%	$\rho < .000$
Engineering	4	2.9%	3	1.3%	
Food	3	2.2%	1	.4%	
Industrial services	18	13.2%	13	5.7%	
Finance/Accountancy	7	5.1%	-	-	
Mineral	1	.7%	2	.9%	
Commercial	38	27.9%	22	9.6%	
Other	31	22.8%	22	9.6%	
Size of the organisation	Count	% (n=134)	Count	% (n=230)	
Under 250 (employees)	33	24.6%	25	10.9%	$\rho > .01$
250-500	16	11.9%	25	10.9%	
501-1,000	14	10.4%	45	19.6%	
1001-5,000	36	26.9%	99	43.0%	
5,001-10,000	7	5.0%	12	5.2%	
Over 10.000	28	20.9%	24	10.4%	

Note: There are slight variations in the effective sample sizes because of the missing values.

Table 5.3 Profiles of Group BMjv and Group CMjv

	British (Total n=47)		Chinese (Total n=35)		Kolmogorov-Smirnov Test
Type of collaborations	Count	% (n=46)	Count	% (n=35)	
Equity JVs	32	69.6%	28	80.0%	$\rho > .100$
Contractual JVs	14	30.4%	7	20.0%	
Age	Count	% (n=46)	Count	% (n=34)	
29 and below	1	2.2%	4	11.8%	
30-39	15	32.6%	8	23.5%	
40-49	15	32.6%	12	35.3%	$\rho > .100$
50-59	13	28.3%	10	29.4%	
60 and above	2	4.3%			
Experience in management	No. of years (n=47)		No. of years (n=35)		
Mean	16		13		
Minimum	1		1		$\rho > .100$
Maximum	40		35		
Counter-cultural experience	No. of months (n=45)		No. of months (n=35)		
Mean	62		42		
Minimum	1		1		$\rho > .100$
Maximum	519		156		
Experience in international collaborative projects	No. of months (n=45)		No. of months (n=35)		
Mean	51		71		
Minimum	1		11		$\rho > .100$
Maximum	244		240		

Note: There are slight variations in the effective sample sizes because of the missing values.

management was over ten years for both groups. With regard to the experience of exposure to the counterpart's culture, both groups of the respondents exhibited some experience with each other. They also had a fair amount of experience in international collaborative projects. It is noticeable that the majority of the British and Chinese respondents were at similar age levels.

Two important notes should be made here with regard to the properties of the samples. First, as can be seen from Table 5.2 and Table 5.3, the information pertaining to demographic and other background characteristics varies slightly in categories from the larger samples of Group BM and Group CM to the smaller samples of Group BM_{jv} and Group CM_{jv}. This is because they were selected for different analytical focuses, i.e., the larger samples for assessment of measure equivalence and the smaller samples for comparative analyses of the key issues in Sino-British collaborations.

Second, from a cross-cultural methodological point of view, comparisons on focal variables should be based on samples of cultural groups that are made as similar as possible in their demographic characteristics (van de Vijver and Leung, 1997). As in most survey research in the social sciences, however, a matching strategy (i.e., control for demographic differences across cultural groups) was not available for the present research because of constraints in sampling operation (van de Vijver and Leung, 1997)[2]. Given this, the use of convenience samples in the present research is regarded appropriate and valuable as far as the differences and similarities in demographic characteristics between the samples are acknowledged (Brislin and Baumgardner, 1971). For this reason a nonparametric test (two-sample Kolmogorov-Smirnov test) was used for testing whether the two samples for comparison came from populations with the same distributions in terms of the selected demographic variables (Hays, 1994, p.854; Norusis/SPSS, 1993, p.387). The test statistics are reported in Tables 5.2 and 5.3 respectively. On inspection of the Kolmogorov-Smirnov statistics, the small observed significance levels indicated that the distributions of the demographic characteristics represented by Group BM and Group CM are not similar, except the

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[2] It can be argued that even when matching is available, it should not be relied upon without reservation when the samples are from cultures that are very different. This is because different meaning systems exist in different cultures in which some of the parameters may be embedded with different schemas. For instance, a first degree in engineering gained in the UK may imply strong hands-on skill resulting from adequate laboratory work in the university, while a similar degree obtained in China may imply good ability in mathematics and theoretical design but not necessarily strong hands-on skill, partly because of more emphasis on basic theory and less laboratory facilities in many Chinese universities than in the UK universities. Brislin and Baumgardner (1971) addressed the importance of establishing equivalence and applicability of the control variables along which subjects were categorised when conducting comparisons between different cultural samples. This issue is of related interest but beyond the scope of the present research.

variable "age" which shows no significant difference. The test statistics for Group BM_{jv} and Group CM_{jv} revealed fairly large observed significance levels ($\rho > .10$), indicating no significant difference in the distribution of the selected demographic properties between the two groups.

5.2 Conditions of inter-personal trust (CTI)

With regard to the CTI, the hypotheses consisted of two parts, namely those for testing for the cross-cultural equivalence of the CTI measurement instrument towards generating measures with "derived etics", and those for comparative analyses of the conditions of inter-personal trust between British and Chinese managers in SBJVs.

The hypotheses for testing measure equivalence state as follows:

H1: In a British organisation the conditions that lead to inter-personal trust can be measured by the ten latent variables (factors): availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, and need for trust, as measured by the CTI.

H2: In a Chinese organisation the conditions that lead to inter-personal trust can be measured by the ten latent variables (factors): availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, and need for trust, as measured by the CTI.

H3 There exists an equal number of factors as measured by the CTI instrument with construct equivalence across British and Chinese managers in measuring the conditions and the overall level of inter-personal trust.

H4 There exists an equal number of factors as measured by the CTI instrument that explain the level of inter-personal trust in the same way for both British and Chinese managers.

Hypotheses H1 and H2 were proposed for testing the applicability of the American-culture-oriented CTI instrument to either British or Chinese cultures. Given H1 and H2 being either rejected or not rejected, inference can be drawn upon the applicability of CTI instrument to British and Chinese cultures, but not upon comparability *between* British and Chinese cultures. Hypotheses H3 and H4 were incorporated for the purpose of obtaining a respecified set of CTI measures that were applicable in *both* British and Chinese cultures. This was deemed a reasonable precaution since there was a danger that a measurement model generated from one culture (USA) would not perfectly fit with different cultures. If H3 and H4 were not rejected, it would mean that cross-cultural equivalence *between* British and Chinese had been derived using a sub-set of the scales matching with the original CTI measure[3].

Assuming H3 and H4 were supported, a series of hypotheses were proposed for testing with regard to the conditions of inter-personal trust in SBJVs. These hypotheses state as follows:

H5 There exists a set of factors as measured by the CTI instrument that have impacts on the level of inter-personal trust for both British and Chinese managers in SBJVs.

H6 There is no difference between the British and Chinese managers in a SBJV with regard to the level of trust in each other and the degree of the conditions of trust perceived on each other.

H7 There is no difference between the level and the conditions of inter-personal trust as perceived by the British manager on the British colleague in a British organisation, and those as perceived by the British manager on the Chinese counterpart in a SBJV.

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[3] As it turns out in the following sections, the original CTI measurement model did not fit the data from the samples in this research, and modifications to the measures had to be made.

H8 There is no difference between the level and the conditions of inter-personal trust as perceived by the Chinese manager on the Chinese colleague in a Chinese organisation, and those as perceived by the Chinese manager on the British counterpart in a SBJV.

Hypothesis 5 was tested to identify which factors are significantly affecting the level of inter-personal trust between the British and Chinese managers in the SBJVs. With the identified significant correlations between the factors and the overall level of trust, comparative analyses were carried out in the following way.

First, hypothesis H6 was tested for comparison between the conditions of inter-personal trust as perceived by a British manager with reference to a Chinese counterpart and those by a Chinese manager with reference to a British counterpart in a SBJV (represented by Group BM_{jv} and Group CM_{jv} respectively). This is analogous with the "static-group comparison design" (or "contrasted groups designs") described above.

Second, hypothesis H7 was tested for comparison between the level and the conditions of inter-personal trust as perceived by a British manager with reference to a British colleague in a British organisation (represented by Group BM), and those perceived by a British manager with reference to a Chinese counterpart in a SBJV (represented by Group BM_{jv}).

Third, hypothesis H8 was tested for comparison between the level and the conditions of inter-personal trust as perceived by a Chinese manager with reference to a Chinese colleague in a Chinese organisation (represented by Group CM), and those perceived by a Chinese manager with reference to a British counterpart in a SBJV (represented by Group CM_{jv}). In other words, the tests of the hypotheses H7 and H8 are comparative analyses analogous with the "non-equivalent control group design" described above.

5.2.1 Measurement validation

The original CTI scales have ten factors of conditions of trust and one factor measuring the overall level of trust. All the factors were measured by four-item multiple indicators on each factor, consisting of a total of forty-four coded variables from cti001 to cti044. The questionnaire in this research included an eleventh factor "need for trust" designed by the researcher, which was also measured by four items (variables cti045-cti048). The full contents of the scales and items are given in Table 5.4. The analyses were based on the data from the samples of 133 British managers who were not involved in SBJVs (Group BM) and 224 Chinese managers who were not involved in SBJVs (Group CM).

5.2.1.1 Preliminary reliability assessment

The reliability assessment of the CTI scales was conducted based on the internal consistency by Cronbach's alpha. This was regarded as a preliminary assessment since internal consistency analysis by Cronbach's alpha does not ensure unidimensionality of the measures but instead assumes it exists (Hair, Jr., Anderson, Tatham and Black, 1995, p.641). The analyses were implemented using SPSS, and the results are provided in Table 5.5. At this point no items were eliminated for the purpose of improving alpha values, but the items that may need to be removed for such purposes and the corresponding improved alpha values are noted in the table for reference in further assessment.

For the sample of British managers who were not involved in Sino-British collaborations (Group BM), the overall measures revealed good reliability, with alpha values ranging from 0.53 for "availability" to 0.94 for "promise fulfilment". For most of the factors, the alpha values were above 0.70 except the factors of "availability" and "need for trust", of which the alpha values were below 0.70 but still above 0.50.

With the sample of Chinese managers who were not involved in SBJVs (Group CM), the overall measures of CTI showed moderate reliability ranging from 0.48 for

Table 5.4 The measurement scales of CTI

Factors	Variables	Item statements
Availability	cti001	He/she is usually around when I need him/her.
	cti002	I can find him/her when I want to talk with him/her.
	cti003	It's usually hard for me to get in touch with him/her.
	cti004	He/she is available when I need him/her.
Competence	cti005	He/she does things competently.
	cti006	Unfortunately, he/she does things poorly.
	cti007	He/she performs her/his tasks with skill.
	cti008	He/she does things in a capable manner.
Consistency	cti009	He/she does things consistently from one time to the next.
	cti010	He/she does the same thing every time the situation is the same.
	cti011	He/she behaves in a consistent manner.
	cti012	I seldom know what he/she will do next.
Discreetness	cti013	He/she keeps secrets that I tell him/her.
	cti014	He/she talks too much about sensitive information that I give him/her.
	cti015	If I give him/her confidential information, he/she keeps it confidential.
	cti016	He/she does not tell others about things if I ask that they be kept secret.
Fairness	cti017	He/she treats me fairly.
	cti018	He/she treats others better than he/she treats me.
	cti019	He/she always gives me a fair deal.
	cti020	He/she treats me on an equal basis with others.
Integrity	cti021	He/she always tells me the truth.
	cti022	He/she would not lie to me.
	cti023	He/she deals honestly with me.
	cti024	Sometimes he/she does dishonest things.
Loyalty	cti025	He/she would not do anything to make me look bad.
	cti026	He/she is likely to take advantage of me.
	cti027	If I make a mistake, he/she will not use it against me.
	cti028	I can discuss problems with him/her without having the information used against me.
Openness	cti029	He/she tells me what he/she is thinking.
	cti030	He/she tells me what's on his/her mind.
	cti031	He/she shares his/her thoughts with me.
	cti032	He/she keeps information from me.
Overall Trust	cti033	Sometimes I can not trust him/her.
	cti034	I can count on him/her to be trustworthy.
	cti035	I feel that he/she can be trusted.
	cti036	I trust him/her.
Promise Fulfilment	cti037	He/she follows through on promises made to me.
	cti038	Keeping promises is a problem for him/her.
	cti039	If he/she promises something to me, he/she will stick to it.
	cti040	He/she does things that he/she promises to do for me.
Receptivity	cti041	He/she readily takes in my ideas.
	cti042	He/she really listens to me.
	cti043	He/she often fails to listen to what I say.
	cti044	He/she makes an effort to understand what I have to say.
Need for trust	cti045	It is important for me to know that he/she trusts me.
	cti046	I always try to figure out whether he/she trusts me.
	cti047	I don't care whether he/she trusts me or not.
	cti048	I would try to improve the situation if I know he/she doesn't trust me.

Note: The order of the items and scales follows from the original instrument; the additional one (need for trust) was added to the end of the instrument.

Table 5.5 Reliability analyses for CTI measurement scales

Factors	Items	Group BM		Group CM		Group BMjv		Group CMjv	
		α_1	α_2 (Deleted items)	α_1	α_2 (Deleted items)	α_1	α_2 (Deleted items)	α_1	α_2 (Deleted items)
Availability	cti001 cti002 cti003 cti004	.53	.79 (cit004)	.48	.59 (cti003)	.67	.73 (cti003)	.49	.75 (cti003)
Competence	cti005 cti006 cti007 cti008	.92		.66	.72 (cti005)	.91		.91	
Consistency	cti009 cti010 cti011 cti012	.84		.62	.68 (cti012)	.89		.48	.61 (cti012)
Discreetness	cti013 cti014 cti015 cti016	.87		.86		.91		.90	
Fairness	cti017 cti018 cti019 cti020	.81		.60	.68 (cti020)	.74		.36	.73 (cti020)
Integrity	cti021 cti022 cti023 cti024	.90		.83		.81		.89	
Loyalty	cti025 cti026 cti027 cti028	.79		.60		.80		.71	
Openness	cti029 cti030 cti031 cti032	.87		.77		.82		.82	
Overall trust	cti033 cti034 cti035 cti036	.93		.88		.81		.95	
Promise fulfilment	cti037 cti038 cti039 cti040	.94		.80		.89		.65	.72 (cti038)
Receptivity	cti041 cti042 cti043 cti044	.83		.74		.73		.70	.79 (cti041)
Need for trust	cti045 cti046 cti047 cti048	.55	.62 (cti046)	.50		.73		-0.07	

Note: α_1 is the preliminary coefficient, α_2 is the coefficient if some items are deleted.

"availability" to 0.86 for "discreetness". Most of the scales had alpha values above 0.50 except "availability" which had an alpha value below 0.50 but may be improved to 0.59 if item 3 (cti003) was removed. The measures of CTI exhibited good reliability for the sample of British managers who were involved in SBJVs (Group BMjv), with alpha values ranging from 0.67 to 0.91. For most of the scales the alpha values were well above 0.70 except "availability" with alpha value of 0.67, which would be improved to 0.73 if item 3 (cti003) was removed.

The reliability of CTI for the sample of Chinese managers who were involved in SBJVs (Group CMjv) showed generally good reliability, except the dimension of "fairness" that had a low alpha value of 0.36 and the dimension of "need for trust" that had an alpha value of 0.07, indicating an unreliable scale. Decisions on whether the items showing poor reliability should be removed from the instrument were not made until after further assessment in the following sections.

5.2.1.2 Factor pattern similarity: exploratory factor analyses of CTI

EFAs were performed on SPSS with the measures of CTI through component analyses (this approach is strongly recommended if there are 20 or more variables, see Nunnally and Bernstein, 1994, p.536). Oblique rotations were used since the factorial dimensions representing the conditions of trust were components of a composite construct, which should not be forced to be mutually orthogonal (Butler, Jr., 1991, p.651).

With EFA it is desirable that the sample is homogeneous with respect to the underlying factor structure (Cattell, 1978, p.442; Hair, Jr., Anderson, Tatham and Black, 1995, p.375; Nunnally and Bernstein, 1994, p.534) because "factors get blurred in pattern and reduced in loading when this is not done" (Cattell, 1978, p.442). As argued by Cattell (1978), by locating "species" with some measurable degree of homogeneity of pattern (i.e., a sample with a "typal homogeneity" in terms of national culture, for instance) and then factoring within, more useful and powerfully predictive factors (i.e., factors of high communality contribution and

stability of pattern) are likely to emerge (p.450)[4]. In this research the EFA analysis followed from the approach in the literature (e.g., Miller, Slomczynski and Schoenberg, 1981, p.178), by which EFAs were performed separately with the two sample groups (Group BM and Group CM), and the results from each group were compared to identify factorial dimensions common to both the British and Chinese groups.

With regard to the number of factors to be extracted, an important principle is to strive for the most representative (or interpretable) and parsimonious set of factors possible (Hair, Jr., Anderson, Tatham and Black, 1995, p.379; Sharma, 1996, p.117). Given the popularity of the latent root (the eigenvalue-greater-than-one rule) and the scree plot criteria, the a priori criterion is justified for testing a theory or hypothesis about the number of factors to be extracted, or replicating another researcher's work and extracting the same number of factors that was previously found (Gerbing and Hamilton, 1997; Hair, Jr., Anderson, Tatham and Black, 1995, p.377). It is also noted in the literature that with large numbers of variables (e.g., >40), the roots criterion seems particularly inaccurate (Stewart, 1981, p.58). In this research the EFA of CTI was for hypothesis test purposes and involved 48 measure items, hence the a priori criterion was used while eigenvalues and percentage of variance were only taken for reference.

In factor analysis, there is a tendency to produce many more dimensions than can be conceptually identified partly due to the "garbage items" which do not have the common core but which do produce additional dimensions (Churchill, Jr., 1979, p.69). When used with pre-existing sets of variables for a new research effort for

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[4] Cattell (1978) pointed out that "if the same determiner has operated in different subgroups the fit of the factor model patterns to the real pattern of the determiner, when a conglomeration of such subgroups is factored, will be poorer. For one thing, the presence of an uneven subspecies distribution, in regard to density, in the population space, will tend to produce curvilinearity of relation absent in the separate more homogeneous groups and perhaps departures from homoscedasticity and other conditions needed for good use of the correlation coefficient" (p.450). For this reason, as Hair, Jr., Anderson, Tatham and Black (1995, p.375) argued, applying factor analysis to a sample of males and females, for instance, for a set of items known to differ because of gender is inappropriate, because with the two sub-samples (males and females) combined, the resulting correlations may be a poor representation of the unique structures of each group. Hence with differing groups, separate factor analyses should be performed.

determining a hypothesised factor structure, factor analysis can be most efficient if the conceptually defined dimensions are represented by the derived factors. In other words, specifying a number of factors equal to the number of conceptual dimensions provides a confirmatory approach (even though it is not truly confirmatory) to evaluating the proposed dimensionality and determining whether the hypothesised number of "structural components" existed in the data (Butler, Jr., 1991, p.650; Hair, Jr., Anderson, Tatham and Black, 1995, p.372; Krippendorff, 1980; Nunnally and Bernstein, 1994, p.454; Schwab, 1980). This approach is not intended to reduce the data to the minimum number of feasible dimensions in an exploratory fashion, but to identify ways "to revise the instrument for the better" (Nunnally, 1970, p.151). Thus, as the a priori criterion, eleven factors of conditions of inter-personal trust were specified to be extracted in the initial EFA process of CTI. The dimension "overall trust" was analysed separately since it was treated as a dependent variable in later analyses.

Four criteria were used to "confirm" which items are the most distinctive measure of the eleven dimensions of conditions of trust for the two groups (cf. Miller, Slomczynski and Schoenberg, 1981, p.181). First, an item had to be consistently related to a factor throughout the processes of analysis. Second, the item had to meet the minimum cut-off point of factor loadings[5]. Third, the item should not be substantially related to more than one factor. Finally, the groupings of items on factors had to be consistent with both sample groups.

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[5] With regard to the significance of factor loadings, this research is based on the three criteria suggested in the literature (e.g., Hair, Jr., Anderson, Tatham and Black, 1995, pp.384). The first relates to practical significance, which regards factor loadings greater than $\pm .30$ as the minimal level, of $\pm .40$ as more important, $\pm .50$ or greater as practically significant. The second provides more conservative guidelines based on mathematical considerations (statistical power) and sample sizes. For instance, with an objective of obtaining a power level of 80 percent at .05 significance level, in a sample of 150 respondents, factor loadings of $\pm .45$ and above are significant; in a sample of 250, factor loadings of $\pm .35$ are regarded significant. The third takes into consideration the number of factors and variables involved. It is suggested that as unique variance and error variance begin to appear in later factors, some upward adjustment in the level of significance of factor loadings should be included. Furthermore, as the number of variables being analysed increases, the acceptable level for considering a loading significant decreases.

The initial factoring by oblique (Oblimin in SPSS) rotations for Group BM and Group CM did not show complete consistency in patterns between the two groups. It appeared that the items (cti041-044) that were supposed to be related to the hypothesised dimension "receptivity" did not load on a common factor according to the above criteria. Furthermore, a few other items did not meet the criteria with respect to the relevant hypothesised dimensions, i.e., items cti002-003 for "availability", item cti008 for competence, item cti012 for "consistency", items cti017 and cti019-020 for "fairness", item cti024 for "integrity", and items cti046-047 for "need for trust".

In order to identify common dimensionality between the two groups, these items were removed by repeated factoring processes and ten factors were specified in the succeeding analyses. By removing these irrelevant variables it allows a more direct test of the explanatory power of hypotheses about the nature of the constructs and a potentially more thorough exploration of the groupings of variables with respect to the constructs which are hypothesised to be common to the two culturally differing sample groups (cf., Nunnally and Bernstein, 1994, p.532).

As a result of such processes, a final solution was achieved for the common dimensionality between the two samples, with a total of ten factors being extracted from a total of twenty-seven items. The results of EFA of CTI are summarised in Table 5.6. All the factors have multi-item measurements with at least two defining variables (Nunnally and Bernstein, 1994, p.483) except the factor "fairness" which has a single indicator (cti018). This single indicator exhibited a high loading on the construct (.95 for British and .99 for Chinese), therefore it has been retained as a measurement to be tested in confirmatory analysis. The separate EFA of "overall trust" showed a result consistent with the original measurement scale (see Table 5.6).

Table 5.6 A summary of the final solution of items identified as core indicators of conditions of trust in EFA for British and Chinese samples

Factors	Original Items	British (n=131)				Chinese (n=224)			
		Core items	Loadings	Commu-nality	Eigen-value	Core items	Loadings	Commu-nality	Eigen-value
Availability	cti001	cit001	.78	.82		cit001	.84	.76	
	cti002				.95				1.54
	cti003								
	cti004	cti004	.89	.86		cti004	.80	.72	
Competence	cti005	cti005	-.71	.87		cti005	.84	.69	
	cti006	cti006	-.70	.86	.68	cti006	.61	.70	.93
	cti007	cti007	-.73	.78		cti007	.53	.62	
	cti008								
Consistency	cti009	cti009	-.62	.79		cti009	.48	.66	1.40
	cti010	cti010	-.92	.85	1.13	cti010	.90	.77	
	cti011	cti011	-.66	.75		cti011	.58	.66	
	cti012								
Discreet-ness	cti013	cti013	.65	.75		cti013	-.83	.80	.81
	cti014	cti014	.72	.73	2.15	cti014	-.49	.59	
	cti015	cti015	.85	.87		cti015	-.69	.78	
	cti016	cti016	.86	.81		cti016	-.72	.77	
Fairness	*cti017*								
	cti018	cti018	.95	.95	.70	cti018	.99	.92	.80
	cti019								
	cti020								
Integrity	cti021	cti021	.65	.87		cti021	.60	.76	9.46
	cti022	cti022	.73	.85	.89	cti022	.81	.84	
	cti023	cti023	.60	.86		cti023	.64	.82	
	cti024								
Loyalty	*cti025*								
	cti026								
	cti027	cti027	-.94	.88	1.35	cti027	.69	.73	.93
	cti028	cti028	-.67	.73		cti028	.39	.67	
Openness	cti029	cti029	.86	.84		cti029	.84	.83	
	cti030	cti030	.92	.88	1.81	cti030	.83	.78	1.68
	cti031	cti031	.86	.82		cti031	.66	.66	
	cti032								
Overall trust	cti033	cti033	.95	.72		cti033	.72	.52	
	cti034	cti034	.94	.83	3.37	cti034	.90	.81	2.99
	cti035	cti035	.91	.89		cti035	.91	.83	
	cti036	cti036	.84	.91		cti036	.90	.82	
Promise fulfilment	cti037	cti037	.85	.84		cti037	-.35	.65	
	cti038	cti038	.81	.78	11.37	cti038	-.47	.60	1.09
	cti039	cti039	.92	.88		cti039	-.80	.78	
	cti040	cti040	.83	.90		cti040	-.78	.78	
Receptivity	*cti041*								
	cti042								
	cti043								
	cti044								
Need for trust	cti045	cit045	.62	.71		cit045	.63	.71	
	cti046				1.44				1.28
	cti047								
	cti048	cti048	.90	.84		cti048	.85	.79	

Note: 1. Factor loadings shown in the table are conservative values without rounding up.
2. British sample: Measure of sampling adequacy .89575; Bartlett test of sphericity 2616.65, significance .0000; cumulative percent of variance explained 83.4%.
3. Chinese sample: Measure of sampling adequacy .90023; Bartlett test of sphericity 2863.98, significance .0000; cumulative percent of variance explained 74.0%.

Inspection of the results in Table 5.6 revealed that general similarities of the factor pattern existed between the two samples. For both sample groups the results of Bartlett test of sphericity (significant at the .01 level) and measure of sampling adequacy (MSA, .90) confirmed the appropriateness of the factor analyses with the data. Communalities of all the variables were over .50, indicating sufficient explanation. Most importantly, the same number of measure items (presented as "core items" in Table 5.6) were identified with significant loadings for each factor across the two groups[6].

This marked similarity of the between-sample factor pattern was augmented by a mathematical approach "vector comparison" (Rummel, 1970, p.460) through congruence coefficients (Cattell, 1978, p.252; Rummel, 1970, p.461) for the pairwise comparisons of factor loading patterns between the samples[7]. It measures not only pattern similarity (like the correlation coefficient) but also an aspect of magnitude similarity (Rummel, 1970, p.461). The results of the congruence coefficients for the two samples are presented in Table 5.7 (re-assessed scale reliability by Cronbach's alpha is also included). They indicated high congruity for most of the factors across the samples, with the lowest degree of congruity being found for "discreetness". Re-assessed Cronbach's alpha values for the scales generally appeared acceptable except for the last factor "need for trust" which were below .50. This indicated that the measure items for this factor were not good measures with the sample data.

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[6] As explained before, the a priori criterion was used in this case, hence some factors have eigenvalues less than one.

[7] The congruence coefficients are computed by

$$rc = \frac{\sum_{j=1}^{n} b_{j1} b_{j2}}{\left(\sum_{j=1}^{n} b_{j1}^2 \sum_{j=1}^{n} b_{j2}^2 \right)^{\frac{1}{2}}}$$

where b_{j1} and b_{j2} are the loadings of variable a_j on the compared factors, F1 and F2 (Cattell, 1978, p.252.). The coefficient ranges from -1.0 (for perfect negative similarity) through zero (for complete dissimilarity) to 1.00 (for perfect similarity) (Rummel, 1970, p.460).

Table 5.7 Congruence coefficients for factor comparison between Group BM and Group CM

Factors	British (n=131)			Chinese (n=224)			Congruence coefficients
	Core items	Loadings	Cronbach alphas	Core items	Loadings	Cronbach alphas	
Availability	cit001	.78	.83	cit001	.84	.62	.82
	cti004	.89		cti004	.80		
Competence	cti005	-.71		cti005	.84		
	cti006	-.70	.90	cti006	.61	.58	-.83
	cti007	-.73		cti007	.53		
Consistency	cti009	-.62		cti009	.48		
	cti010	-.92	.84	cti010	.90	.68	-.99
	cti011	-.66		cti011	.58		
Discreetness	cti013	.65		cti013	-.83		
	cti014	.72	.86	cti014	-.49	.85	-.45
	cti015	.85		cti015	-.69		
	cti016	.86		cti016	-.72		
Fairness	cti018	.95	n/a	cti018	.99	n/a	1
Integrity	cti021	.65		cti021	.60		
	cti022	.73	.92	cti022	.81	.87	.99
	cti023	.60		cti023	.64		
Loyalty	cti027	-.94	.78	cti027	.69	.65	-.79
	cti028	-.67		cti028	.39		
Openness	cti029	.86		cti029	.84		
	cti030	.92	.90	cti030	.83	.80	.99
	cti031	.86		cti031	.66		
Overall trust	cti033	.95		cti033	.72		.99
	cti034	.94	.93	cti034	.90	.87	
	cti035	.91		cti035	.91		
	cti036	.84		cti036	.90		
Promise fulfilment	cti037	.85		cti037	-.35		-.96
	cti038	.81	.94	cti038	-.47	.80	
	cti039	.92		cti039	-.80		
	cti040	.83		cti040	-.78		
Need for trust	cit045	.62	.49	cit045	.63	.44	.99
	cti048	.90		cti048	.85		

Note: In this table (and in the following sections) only those items retained as core indicators from EFA are presented.

The above EFA resulted in modified measures of the conditions of inter-personal trust from the original CTI instrument. By removing the factor "receptivity" and a few measure items from the original instrument, similar factor patterns were established between the two samples. This similarity was further supported by the congruence coefficients. The modified measure instrument (still referred to as "CTI") was used as a model that was further tested with CFA in the following.

5.2.1.3 Factorial invariance: confirmatory factor analyses of CTI

The SEM (based on LISREL in the present research) process consists of two conceptually distinct sub-models: a measurement and a structural model. The measurement model is also called CFA, which specifies the causal relations between the observed variables (indicators) and the underlying latent variables or theoretical constructs that are presumed to determine responses to the observed measures. The structural model specifies the causal relations among the unobserved constructs represented as exogenous and endogenous variables. In the following sections, factorial invariance of the measurement scales of CTI will be assessed by CFA with the sampling data. The hypothesised relations between the conditions of trust (the exogenous variables) and the overall level of trust (the endogenous variable) across the two cultures will be investigated by applying the SEM technique.

It is important to note that the application of SEM in this research was intended as a heuristic strategy (Gerbing and Hamilton, 1997) based on Jöreskog's (1993) "model generating" (MG) approach. With this strategy a tentative initial model is tested, and if the initial model does not fit the given data, the model is modified and tested again using the same data, so that a model can be found that not only fits the data well from a statistical point of view but also has the property that every parameter of the model can be given a substantively meaningful interpretation (Jöreskog, 1993, p.295). The researcher is cognisant of its limitations pointed out in the literature (e.g., MacCallum, 1995, p.33; Watkins, 1989, p.698). The outcome from the MG process is not regarded as the perfect final solution. It is, however, a validated alternative model

that would be further evaluated using new data in the future research[8]. For exploratory purposes, the validated models were used as tentative instruments for comparative analyses of the key research issues.

The measurement model

The CFA through LISREL provides a chi-square test and goodness-of-fit indexes of the ability of the same factor solution to fit data from different samples. The measurement model of CTI was based on the modified scales of CTI (as presented in Table 5.6) confirmed by the EFA. It consisted of twenty-seven items as indicators of ten latent variables that are hypothesised as conditions leading to the establishment of trust. This initial ten-factor measurement model is conceptually presented in Figure 5.2[9]. The squares represent the observed variables (effective indicators) that measure the latent variables (constructs), i.e., the ten factors of conditions of trust, which are represent by circles. The straight arrow lines denote the proposed causal link from the latent variables to their observed variables. The conceptual model is transferred into a statistical model represented in a path diagram with LISREL notations in Figure 5.3[10].

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[8] It is noted (e.g., MacCallum, 1995, p.33; Watkins, 1989, p.698) that modifications made to an original model must be substantively meaningful and justifiable, and the modified model should be validated by cross-validation. In the present work, the information from EFAs and CFAs was used in connection with the definitions of the original models (CTI as well ROCI-II) to support the model modification. As the limited sample sizes in this research did not permit cross-validation with split samples, the MG method was used in an exploratory fashion to specify a series of alternative models, which need to be tested with new data in future research.

[9] Jöreskog (1993) suggested to start with estimating the measurement model for each construct separately (i.e., single-factor model), which is particularly appropriate when the sample sizes are not large enough and unequal between the groups (e.g., Windle, Iwawaki and Lerner, 1988). However, the single-factor model has a shortcoming that at least four measures are needed to yield an overidentified model for which a goodness-of-fit index can be generated (Bagozzi, 1994, p.326). In this section the SEM analyses started with a multi-factor model since a number of the factors have less than four measures in the modified CTI model. In the next section (analyses of styles of handling inter-personal conflicts) the single-factor-model approach is used since most of the factors have more than four indicators.

[10] The presentation of the analyses in this work has followed from the practices reported in the literature (e.g., Byrne, Shavelson and Muthén 1989; Hair, Jr., Anderson, Tatham and Black, 1995; Hoyle and Panter, 1995; Jaccard and Wan, 1996) to balance between sifting through large amount of output routinely generated from LISREL and presenting the results in a way that permits a reasoned evaluation and understanding of the analysis without overwhelming or confusing readers (Hoyle and Panter, 1995, p.158).

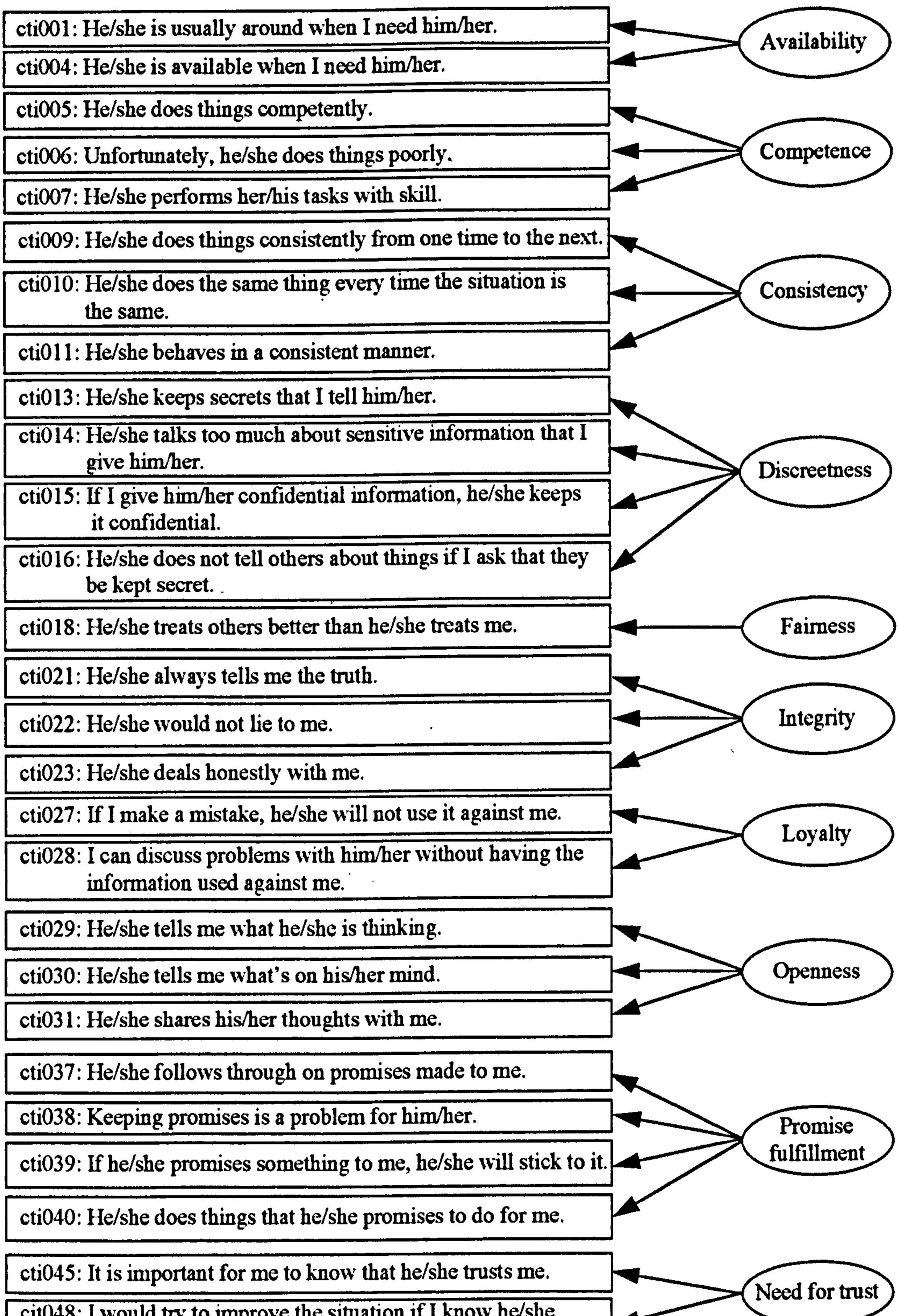

Figure 5.2 Conceptual measurement model of CTI

(Note: The latent exogenous variables are assumed to be correlated but without a formal causal relationship between them. The conventional curved lines linking the latent variables to indicate the correlations are omitted here to reduce clutter.)

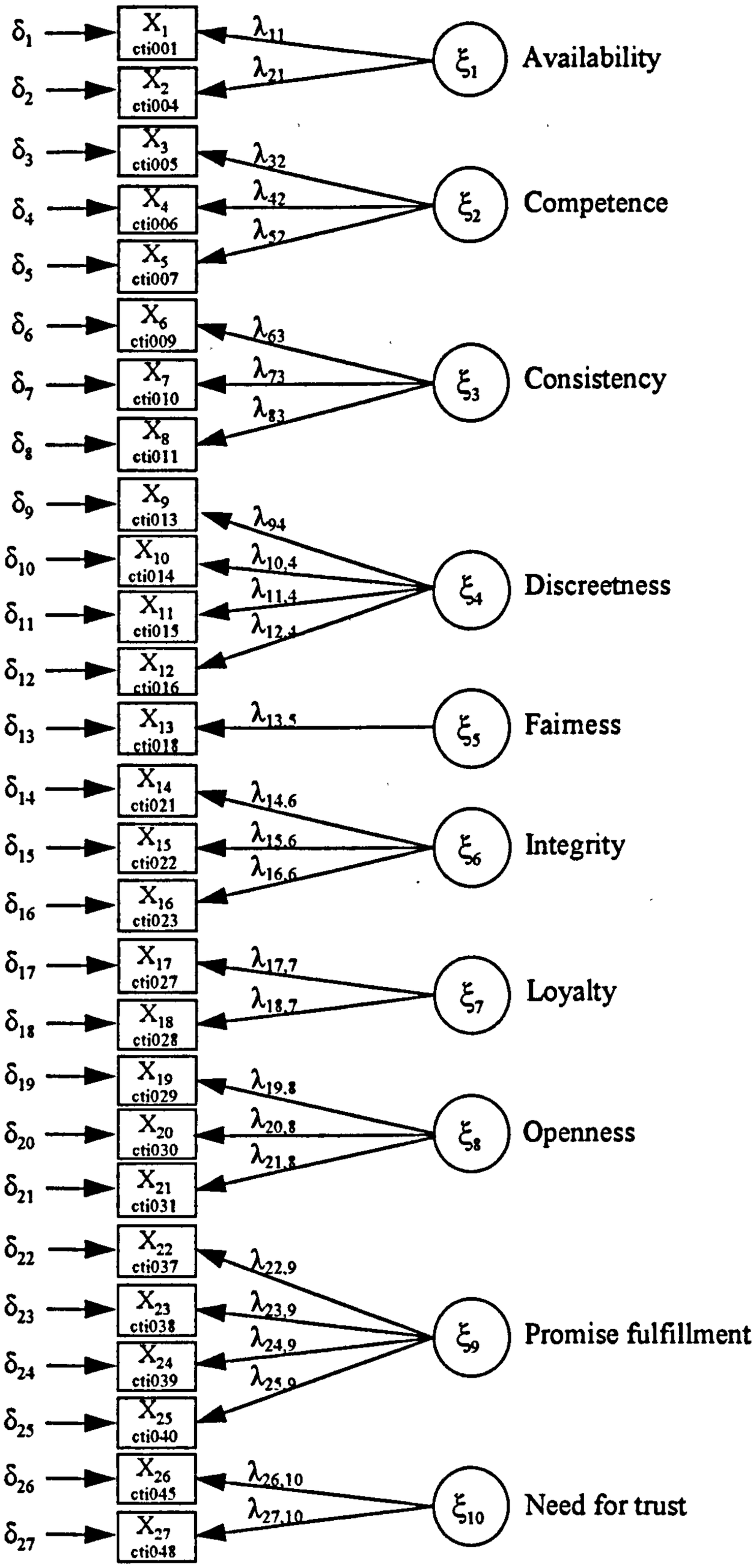

Figure 5.3 Path diagram of the measurement model of CTI (exogenous variables)
(Note: The latent exogenous variables are assumed to be correlated but without a formal causal relationship between them. The conventional curved lines linking the latent variables to indicate the correlations are omitted here to reduce clutter.)

In line with the hypotheses H1 and H2 and the general assumptions of SEM, the model hypothesised a priori that (a) the conditions of inter-personal trust can be measured by the ten latent variables (factors): availability (ξ_1), competence (ξ_2), consistency (ξ_3), discreetness (ξ_4), fairness (ξ_5), integrity (ξ_6), loyalty (ξ_7), openness (ξ_8), promise fulfilment (ξ_9), and need for trust (ξ_{10}); (b) each sub-scale measurement item has a non-zero loading on the variable that it is designed to measure (i.e., target loading) and has a zero loading on all other variables (i.e., non-target loadings); (c) the ten factors are correlated (Butler, Jr., 1991); and (d) error/uniqueness terms for each of the measures are uncorrelated.

The specification of the CFA model in LISREL is accomplished by fixing or constraining elements in three matrices: (a) the factor loading matrix (Lambda X; Λ_X); (b) the factor variance-covariance matrix (Phi; Φ) which represents the relations among the factors; and (c) a diagonal matrix of error/uniqueness parameters for each measured variable (Theta delta; Θ_δ). Table 5.8 summarises the pattern of parameters estimated for these matrices. The Greek characters (λs, φs and θs) denote the parameters to be estimated; the zeros were fixed a priori, indicating fixed parameters not to be estimated. For purposes of identification, the first of each cogeneric set of CTI measures was fixed to 1.0 (i.e., reference indicator).

The measurement model of the endogenous variable "overall trust" was based on the original scale since the EFA of the construct revealed a consistent psychometric pattern with the original measure. The conceptual model and the statistical model with LISREL notations are jointly presented in Figure 5.4. Similar to the exogenous variables, the measurement model of the endogenous variable (η_1) may be specified by fixing or constraining (a) the factor loading matrix (lambda Y; Λ_Y); (b) the Beta (B) matrix specifying causal paths among different latent variables; (c) the Theta Epsilon (Θ_ε) matrix specifying measurement error (the ε variables in Figure 5.4) for the observed Y variables (it is identical in form to the Theta Delta matrix, but the focus is on Y scores rather than X scores); and (d) the Psi (Ψ) variance-covariance matrix focusing on the latent residual term (ζ in the path diagram). The pattern of parameters estimated for these matrices is also summarised in Table 5.8.

Table 5.8 Pattern of LISREL parameters for model fitting (CTI)

Lambda X matrix

X	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	ξ_6	ξ_7	ξ_8	ξ_9	ξ_{10}
cti001: X_1	1	0	0	0	0	0	0	0	0	0
cti004: X_2	λ_{21}	0	0	0	0	0	0	0	0	0
cti005: X_3	0	1	0	0	0	0	0	0	0	0
cti006: X_4	0	λ_{42}	0	0	0	0	0	0	0	0
cti007: X_5	0	λ_{52}	0	0	0	0	0	0	0	0
cti009: X_6	0	0	1	0	0	0	0	0	0	0
cit010: X_7	0	0	λ_{73}	0	0	0	0	0	0	0
cti011: X_8	0	0	λ_{83}	0	0	0	0	0	0	0
cti013: X_9	0	0	0	1	0	0	0	0	0	0
cti014: X_{10}	0	0	0	$\lambda_{10,4}$	0	0	0	0	0	0
cti015: X_{11}	0	0	0	$\lambda_{11,4}$	0	0	0	0	0	0
cti016: X_{12}	0	0	0	$\lambda_{12,4}$	0	0	0	0	0	0
cti018: X_{13}	0	0	0	0	1*	0	0	0	0	0
cti021: X_{14}	0	0	0	0	0	1	0	0	0	0
cti022: X_{15}	0	0	0	0	0	$\lambda_{15,6}$	0	0	0	0
cti023: X_{16}	0	0	0	0	0	$\lambda_{16,6}$	0	0	0	0
cti027: X_{17}	0	0	0	0	0	0	1	0	0	0
cti028: X_{18}	0	0	0	0	0	0	$\lambda_{18,7}$	0	0	0
cti029: X_{19}	0	0	0	0	0	0	0	1	0	0
cti030: X_{20}	0	0	0	0	0	0	0	$\lambda_{20,8}$	0	0
cti031: X_{21}	0	0	0	0	0	0	0	$\lambda_{21,8}$	0	0
cti037: X_{22}	0	0	0	0	0	0	0	0	1	0
cti038: X_{23}	0	0	0	0	0	0	0	0	$\lambda_{23,9}$	0
cit039: X_{24}	0	0	0	0	0	0	0	0	$\lambda_{24,9}$	0
cti040: X_{25}	0	0	0	0	0	0	0	0	$\lambda_{25,9}$	0
cti045: X_{26}	0	0	0	0	0	0	0	0	0	1
cti048: X_{27}	0	0	0	0	0	0	0	0	0	$\lambda_{27,10}$

*Note: X_{13} (cti018) is a single item measure, hence the value of the coefficient is fixed at 1, implying a perfect measure of the construct ξ_5 (Fairness) with zero error, and the coefficient for the error term (δ_{13}) was fixed at zero (see Theta Delta Matrix).

Table 5.8 Pattern of LISREL parameters for model fitting (CTI) (continued)

Phi matrix

Φ	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	ξ_6	ξ_7	ξ_8	ξ_9	ξ_{10}
ξ_1	φ_{11}									
ξ_2	φ_{21}	φ_{22}								
ξ_3	φ_{31}	φ_{32}	φ_{33}							
ξ_4	φ_{41}	φ_{42}	φ_{43}	φ_{44}						
ξ_5	φ_{51}	φ_{52}	φ_{53}	φ_{54}	φ_{55}					
ξ_6	φ_{61}	φ_{62}	φ_{63}	φ_{64}	φ_{65}	φ_{66}				
ξ_7	φ_{71}	φ_{72}	φ_{73}	φ_{74}	φ_{75}	φ_{76}	φ_{77}			
ξ_8	φ_{81}	φ_{82}	φ_{83}	φ_{84}	φ_{85}	φ_{86}	φ_{87}	φ_{88}		
ξ_9	φ_{91}	φ_{92}	φ_{93}	φ_{94}	φ_{95}	φ_{96}	φ_{97}	φ_{98}	φ_{99}	
ξ_{10}	$\varphi_{10,1}$	$\varphi_{10,2}$	$\varphi_{10,3}$	$\varphi_{10,4}$	$\varphi_{10,5}$	$\varphi_{10,6}$	$\varphi_{10,7}$	$\varphi_{10,8}$	$\varphi_{10,9}$	$\varphi_{10,10}$

Theta Delta matrix

Θ_δ	δ_1	δ_2	δ_3	δ_4	δ_5	δ_6	δ_7	δ_8	δ_9	δ_{10}	δ_{11}	δ_{12}	δ_{13}	δ_{14}	δ_{15}	δ_{16}	δ_{17}	δ_{18}	δ_{19}	δ_{20}	δ_{21}	δ_{22}	δ_{23}	δ_{24}	δ_{25}	δ_{26}	δ_{27}
δ_1	δ_1																										
δ_2	0	δ_2																									
δ_3	0	0	δ_3																								
δ_4	0	0	0	δ_4																							
δ_5	0	0	0	0	δ_5																						
δ_6	0	0	0	0	0	δ_6																					
δ_7	0	0	0	0	0	0	δ_7																				
δ_8	0	0	0	0	0	0	0	δ_8																			
δ_9	0	0	0	0	0	0	0	0	δ_9																		
δ_{10}	0	0	0	0	0	0	0	0	0	δ_{10}																	
δ_{11}	0	0	0	0	0	0	0	0	0	0	δ_{11}																
δ_{12}	0	0	0	0	0	0	0	0	0	0	0	δ_{12}															
δ_{13}	0	0	0	0	0	0	0	0	0	0	0	0	0														
δ_{14}	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{14}													
δ_{15}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{15}												
δ_{16}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{16}											
δ_{17}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{17}										
δ_{18}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{18}									
δ_{19}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{19}								
δ_{20}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{20}							
δ_{21}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{21}						
δ_{22}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{22}					
δ_{23}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{23}				
δ_{24}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{24}			
δ_{25}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{25}		
δ_{26}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{26}	
δ_{27}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{27}

Table 5.8 Pattern of LISREL parameters for model fitting (CTI) (continued)

Lambda Y matrix

Y	η_1
cti033: Y_1	1
cti034: Y_2	λ_{21}
cti035: Y_3	λ_{31}
cti036: Y_4	λ_{41}

Beta matrix

B	η_1
η_1	0

Theta Epsilon matrix

Θ_ε	ε_1	ε_2	ε_3	ε_4
ε_1	ε_1			
ε_2	0	ε_2		
ε_3	0	0	ε_3	
ε_4	0	0	0	ε_4

Psi matrix

Ψ	ζ_1
ζ_1	ψ_{11}

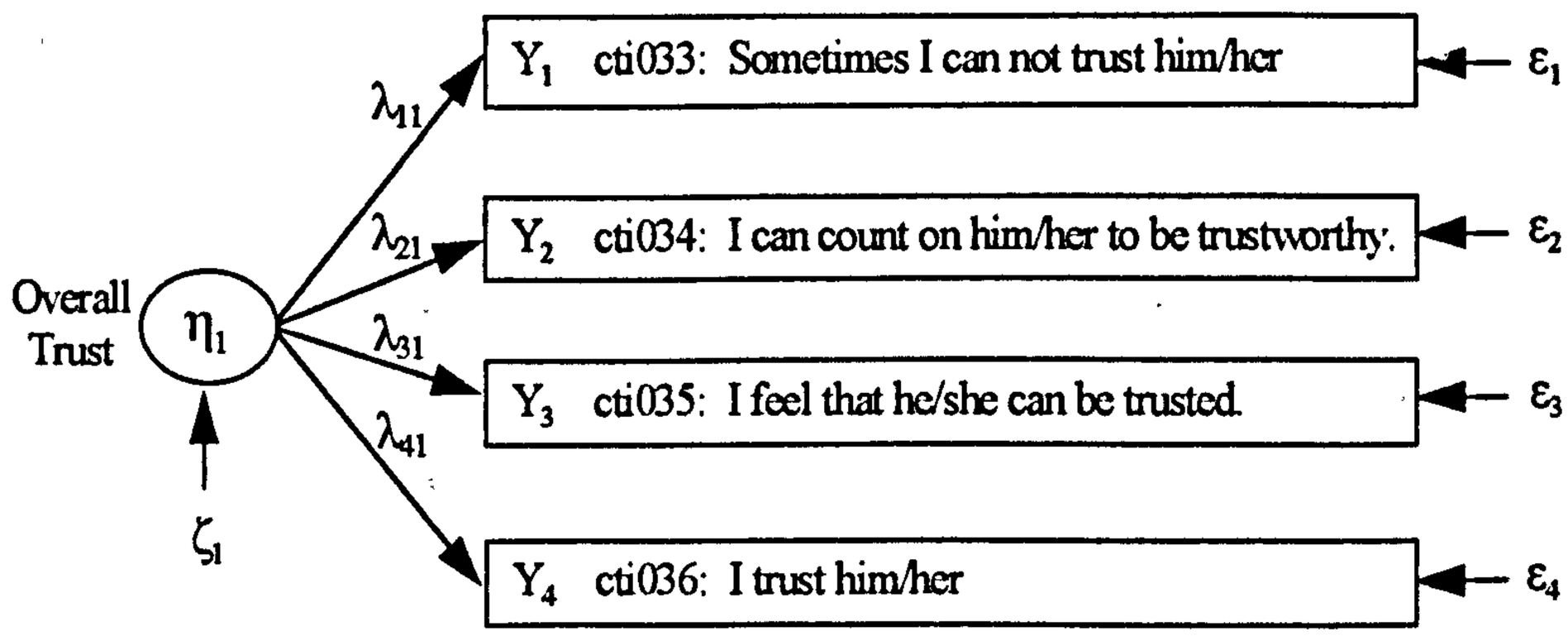

Figure 5.4 Path diagram of the measurement model of CTI (endogenous variable)

At this point, however, the endogenous variable "overall trust" was not yet combined with the exogenous variables as an all-exogenous variables model in CFA as it could be (Herting, 1985). It was an attempt to minimise the number of parameters in the measurement model as the sample sizes were not sufficiently large enough, given that the initial EFA analysis of "overall trust" showed reasonably good match in factor loadings and the congruence coefficient. The endogenous variable was assessed after the model fit of exogenous variables had been established.

Analytical approaches

In testing for group differences in parameters across samples, different approaches are suggested in the literature. For instance, one can first conduct an overall test of the equivalence of covariance matrices between groups before further analysis (e.g., a sequential test of partial measurement invariance on specific sub-scales, as discussed in Byrne, Shavelson and Muthén, 1989). Jaccard and Wan (1996) did not recommend this approach and suggested using a nested goodness-of-fit approach moving directly to the test of group differences on the parameter of interest. They argue that "the overall test of the equivalence of covariance matrices usually will have less statistical power than the more focused test (everything else being equal), making it more likely that the investigator will overlook a non-zero interaction effect" (p.42).

It should be noted, however, that Jaccard and Wan's approach is subject to a prerequisite that goodness-of-fit has been established with the measurement models of exogenous and endogenous variables for each sample. As Anderson and Gerbing (1982, p.453) noted, proper specification of the measurement model is necessary before meaning can be assigned to the analysis of the structural model, namely, "good measurement of the latent variables is a prerequisite to the analysis of the causal relations among the latent variables". Likewise, estimating equivalence of measures between distinct samples is not possible before reliable measures are identified for each sample. An empirical analysis of differences between these approaches is beyond the focus of this research. For operational appropriateness, the approaches

recommended in Byrne, Shavelson and Muthén (1989) and Jaccard and Wan (1996) have been integrated in the following analyses.

First, an initial model was estimated separately for each sample group to establish a "baseline model", which "represents the most parsimonious, yet substantively most meaningful and best fitting, model to the data" (Byrne, Shavelson and Muthén, 1989, p.456). Second, the invariance of CTI measurements across groups was tested by simultaneous multi-group test, which followed from the "nested goodness-of-fit strategy" (Jaccard and Wan, 1996) in three steps:

(a) calculating model fit through a multiple-group solution in which LISREL estimates parameters in different groups with no across-group constraints;
(b) calculating model fit through a multi-group solution in which LISREL estimates parameters in different groups with an across-group constraint imposed to reflect the interaction effect caused by the cultural nature of the groups;
(c) calculating the difference in model fit (based on χ^2) by subtracting the fit index for the constrained solution from the fit index for the unconstrained solution. If the difference in χ^2 ($\Delta\chi^2$) is not significant, the hypothesis of an invariant pattern of parameter loadings is considered tenable since the difference in chi-square values for two nested models is itself distributed as a chi-square value with degrees of freedom equal to the difference in degrees of freedom for the two models.

Finally, the interaction effect on the causal relations between the conditions of the trust and the overall trust was tested through the structural model across the groups.

Assessment of model fit

Assessment of fit between the hypothesised model and the sample data is the most important issue in the analysis of LISREL models (Byrne, Shavelson and Buthén, 1989). In assessing the model fit the covariance matrix for the measurement items was used, and the parameter estimates were made under the maximum-likelihood method. To summarise the key criteria for model fitting from the literature (e.g.,

Byrne, Shavelson and Muthén, 1989; Jöreskog, 1993; Long, 1983a, 1983b), the following indices and criteria were applied in assessing the overall model fit with the sample data and modification of the model:

(1) *Feasibility of parameter estimates.* Poor fit of a model is usually indicated by negative variances, standardised correlations >1.00, covariance or correlations matrices that were not positive definite, excessively large standard errors, and parameter estimates that were highly correlated. Inspection of the LISREL output was routinely carried out to identify whether such problems occurred.

(2) *Adequacy of the model.* This involved checking the squared multiple correlations (R^2) for each observed variable and the coefficient of determination for all the observed variables jointly. As an indication of the reliability of each observed measure with respect to its underlying latent construct, the R^2 that is close to 1.00 represents good reliability, with .50 or less indicating poor reliability. As a generalised indicator of reliability for the entire model, the coefficient of determination indicates how well the observed variables, in combination, serve as measuring instruments for all the latent variables jointly. Values close to 1.00 represent good models.

(3) *Goodness-of-fit of the overall model.* The maximum likelihood χ^2 ratio test has been known to be sensitive to the sample size and various model assumptions (i.e., linearity, multinormality, additivity). Assessment of overall model fit in this research was based on multiple criteria[11] that consisted of both statistical and practical

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[11] In this research the effective sizes of the two samples (Group BM and Group CM) were unequal and not large enough (Group BM, n=132; Group CM, n=225), but a sample size near 150 would be regarded as just acceptable for the kind of analyses in this research (see Jaccard and Wan, 1996, p.72). In addition, with mean kurtosis .34 for Group BM and .22 for Group CM (mean skewness were .95 for Group BM and .57 for Group CM, but they are less important than kurtosis, see Boomsma, 1987, p.184), the data was only regarded to approximate a normal distribution. Ideally the Satorra-Bentler SCALED test statistic (available in EQS programme) should be used since it has been found the most adequate test statistic and index of model fit under conditions of nonnormality and even at small sample sizes (Hu and Bentler, 1995). This was not used in this research because EQS was not available to the researcher at the time of completing this work. Nevertheless, the use of maximum likelihood (ML) estimation approach in this research justifies the use of LISREL with the sample data since ML is regarded to have robust properties with sample size not less than 100 and data of moderate departures from the skewness and kurtosis of the normal distribution (Boomsma, 1987, p.177; Cuttance, 1987, p.270; Jaccard and Wan, 1996, p.75).

(subjective) indices (Bentler and Bonett, 1980; Byrne, Shavelson and Muthén, 1989). Statistical indices of fit are the maximum likelihood χ^2 ratio test, the goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI), and root-mean-square residual (RMSR) provided by LISREL. The cut-off points of these indices were based on the 5% significance level for χ^2 ratio test, GFI/AGFI >.90 and RMSR<.05. Practical indices include the χ^2/df ratio, the Bentler and Bonett normed index (BBI), the Tucker and Lewis non-normed index (TLI) and the comparative fit index (CFI). They are appropriate for comparing samples of unequal size, and TLI and CFI have been known to be relatively independent of sample size (Bentler, 1990; Byrne, Shavelson and Muthén, 1989, p.459; Marsh, Balla and McDonald, 1988). The cut-off points were based on χ^2/df<2, BBI >.90, TLI >.90, and CFI>.90 (Bagozzi and Foxall, 1996; Byrne, Shavelson and Muthén, 1989)[12].

(4) *Goodness-of-fit of individual model parameters.* In order to assist in isolating parameters that may be contributing to the overall misfit of a hypothesised model, a few other indices provided in LISREL were used as a statistical approach to assessing the model in conjunction with the substantive meaningfulness of the model. They include t-values (in fact standardised z values provided by LISREL), standardised residuals, and modification indices. The t-values >2.00 are considered to be statistically significant; standardised residual values >2.58 for any element may be considered as indication of possible model misspecification; and a modification index >5 indicates possible significant drop in χ^2 through model modification by freeing a particular parameter (Byrne, 1989, p.56; Marsh and Hocevar, 1985, pp.566, 567).

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[12] The calculation of the practical indices are as follows:

$$\text{TLI} = \frac{\left(\chi_o^2/df_o\right)-\left(\chi_f^2/df_f\right)}{\left(\chi_o^2/df_o\right)-1};\ \text{BBI} = \frac{\chi_o^2-\chi_f^2}{\chi_o^2};\ \text{CFI} = \frac{\left(\chi_o^2-df_o\right)-\left(\chi_f^2-df_f\right)}{\left(\chi_o^2-df_o\right)}$$

where χ_o^2 and df_o are for the null models, χ_f^2 and df_f are for the focal (proposed) models (Bagozzi and Foxall, 1996; Bentler, 1990; Hair, Jr., Anderson, Tatham and Black, 1995).

The CTI model fit

The initial ten-factor model of CTI shown in Figure 5.3 and Table 5.8 was estimated with the data from Group BM and Group CM separately. In connection with the hypotheses H1 and H2, this was to test the ability of the model to fit with the data for each sample group without specifying that any of the parameter estimates be the same across the groups. The LISREL results of goodness-of-fit indices are summarised in Table 5.9[13].

Table 5.9 Summary of goodness-of-fit of fitting baseline models (CTI): the initial ten-factor model

Competing models	χ^2	*df*	$\Delta\chi^2$	Δdf	χ^2/df	TLI	BBI	CFI	GFI	AGFI	RMSR
Group BM (n=131)											
0. Null model	5544.09	351	-	-	15.80	-	-		-	-	-
1. Basic model	332.30 (ρ<.05)	280	-	-	1.19	.99	.94	.99	.852	.800	.052
2. $\lambda_{7,4}$ free	318.46 (ρ>.05)	279	13.84 (ρ>.05)	1	1.14	.99	.94	.99	.856	.805	.048
Group CM (n=224)											
0. Null model	3121.85	351	-	-	8.89	-	-		-	-	-
1. Basic model	497.81 (ρ=.000)	280	-	-	1.78	.90	.84	.92	.859	.810	.060

The results in Table 5.9 revealed arbitrary results for the fit of the initial ten-factor CTI model (shown as "Basic model") with the data from Group BM. The practical indices suggested reasonable fit (χ^2/df =1.19, TLI=.99, BBI=.94, CFI=.99), but statistics indices showed unsatisfactory results (i.e., χ^2(280, n=131) = 332.30, ρ<.05; GFI=.852, AFGI=.800, RMSR=.052). Since none of the statistics indices were beyond the cut-off points, the fit of the model was regarded unsatisfactory and

[13] The LISREL generated large amount of outputs from each model fitting process. To avoid over-voluminous presentation, the LISREL outputs in this and following early model fitting processes were omitted. Only the output for the final model (Table 5.17) was provided as an illustration.

hypotheses H1 had to be rejected. This suggests that the original CTI measure instrument generated in the American culture cannot be directly used to measure the conditions of inter-personal trust in the British culture. It also indicates that although EFA may help to identify the common dimensions (factors), more rigorous tests based on CFA may reveal that the model resulting from EFA does not fit the sample data.

Inspection of the results of the initial ten-factor CTI model fitting for Group CM indicated that both statistics and practical indices were not satisfactory, i.e., $\chi^2(280, n=224) = 497.81$, $\rho<.05$, GFI=.859, AGFI=.810, RMSR=.060, BBI=.84, except TLI and CFI marginally met the cut-off point (TLI=.90, CFI=.92). These results suggest that the model did not fit the sample data, hence the hypothesis H2 had to be rejected. The rejection of the hypothesis H2 implies that the CTI measure instrument generated in the American culture cannot be directly used to measure the conditions of inter-personal trust in the Chinese culture.

From the model-generating (MG) viewpoint, the initial model may be respecified towards modified models that fit the data from each sample separately. For instance, after respecification of the model (i.e., $\lambda_{7,4}$ freed for estimation) for Group BM, the model revealed a good fit, i.e., $\chi^2(279, n=131) = 318.46$, $\rho>.05$, TLI=.99, BBI=.94, CFI=.99 (see Table 5.9). This suggests that the hypothesis H1 can be supported on condition that the item cti010 is allowed to double-load on factors "consistency"(ξ_3) and "discreetness" (ξ_4). In the same way, a modified model may also be identified that fits with the data from Group CM. However, such stand-alone separate model respecification with each sample would result in substantially different respecified models of no practical usage for comparative analyses in the present research. The focus here was to identify a model with equivalent measures that simultaneously fit both British and Chinese culture, hence analyses were moved to test for the hypotheses H3 and H4.

Given the modified, better fit model with Group BM as describe above, inspection of the LISREL output of Group CM was carried out on the basis of the feasibility of parameter estimates, goodness-of-fit of the overall model, adequacy of the model and

goodness-of-fit of individual model parameters as discussed before. It revealed that a number of observed exogenous variables showed poor fit. For instance, the squared multiple correlations were less than .50 for cti006, cti010, cti014, cti027, cti031, cti038 and cti048; extreme values of standardised residuals (>2.58) and modification indices (>5) were observed for a number of observed exogenous variables. For comparative purposes, the model was modified by eliminating those offending parameters by degrees towards a respecified, better fitted model with equal numbers of indicators per factor for both samples (Byrne, Shavelson and Muthén, 1989, p.457; Herting, 1985, p.309).

The initial ten-factor CTI measurement model was subsequently respecified into a seven-factor model of CTI, with several indicators (cti010, cti018, cti027, cti028, cti031, cti037, cti038, cti045, cti048) and three factors ("fairness", "loyalty", and "need for Trust") removed from the initial model. The modified seven-factor measurement model is show in Figure 5.5, and the subsequent results of the baseline model fitting for both groups are given in Table 5.10.

As shown in Table 5.10, the seven-factor model fitted well with the sample data for both groups. The χ^2 ratios were not significant for both sample groups (ρ>.10); GFI>.90 for both groups; AGFI was marginally close to .90 for British group and above .90 for Chinese group; RMSR<.05 for both groups. All the practical indices showed good fit of the model with the sample data: for both groups χ^2/df<2, TLI>.97, BBI>.90, CFI>.97.

In order to test for the measurement model of endogenous variable "overall trust", this variable was included into the exogenous variable measurement model to form an all-exogenous-variable measurement model, and the model fit was re-estimated with CFA. An inspection of the initial analysis indicated that cti033 was not a good indicator for the factor, hence it was eliminated. The factor "overall trust" was then measured by three indicators (cti034, cti035, cti036). The all-exogenous-variable measurement model was then re-estimated and the CFA results are presented in Table 5.11.

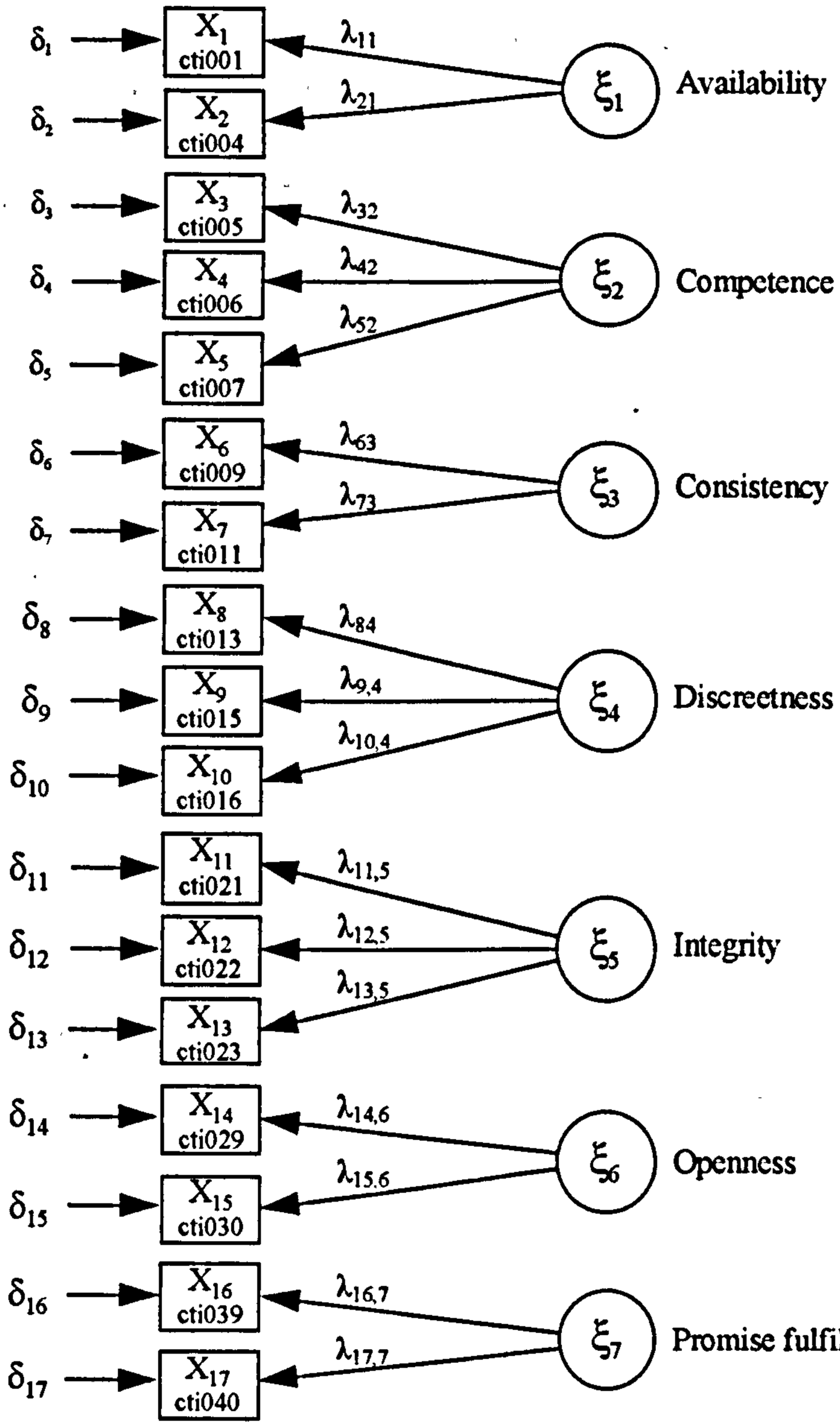

Figure 5.5 Modified seven-factor measurement model (CTI)

(Note: The latent exogenous variables are assumed to be correlated but without formal causal relationship between them. The conventional curved lines linking the latent variables to indicate the correlations are omitted here to reduce clutter.)

Table 5.10 Summary of goodness-of-fit of the baseline model (CTI): the modified seven-factor model

Competing models	χ^2	*df*	χ^2/df	TLI	BBI	CFI	GFI	AGFI	RMSR
Group BM (n=132)									
0. Null model	1797.75	136	13.22	-	-		-	-	-
1. Basic model	99.91 (ρ=.427)	98	1.02	1.00	.94	1.00	.924	.881	.037
Group CM (n=226)									
0. Null model	1234.96	136	9.08	-	-		-	-	-
1. Basic model	114.52 (ρ=.122)	98	1.17	.98	.91	.98	.946	.916	.032

Table 5.11 Summary of goodness-of-fit of the baseline model (CTI): Exogenous and endogenous factors combined

Competing models	χ^2	*df*	χ^2/df	TLI	BBI	CFI	GFI	AGFI	RMSR
Group BM (n=132)									
0. Null model	2535.22	190	13.34	-	-		-	-	-
1. Basic model	170.41 (ρ=.052)	142	1.19	.98	.93	.99	.895	.844	.039
Group CM (n=224)									
Null model	2924.80	190	15.39	-	-		-	-	-
1. Basic model	174.66 (ρ=.032)	142	1.23	.98	.94	.99	.930	.897	.032

The results showed that the model fitted well with Group BM (χ^2 (142, n=132) = 170.41, ρ>.05, χ^2/df =1.20, TLI = .98, BBI = .93; CFI= .99, GFI=.895, AGFI=.844, RMSR=.039). The model fit with the data from Group CM appeared somewhat arbitrary, because on the basis of the indices of χ^2/df ratio, TLI, BBI and CFI, the results indicate a good fit (χ^2/df = 1.23, TLI = .98, BBI = .94, CFI = .99) while χ^2 ratio was significant (ρ<.05). Through inspection of the LISREL outputs, it was anticipated that the model fit for both groups may improve if cti022 was removed since it was involved in the large values of standardised residuals (>2.58) and the modification index (>5). Hence, with cti022 eliminated, the model was further modified into a 7-factor with 19-item measure model, and another round of test was carried out. This resulted in an satisfactory improvement of the model fit for both groups. The goodness-of-fit indices are summarised in Table 5.12.

Table 5.12 Summary of goodness-of-fit of the final baseline model of CTI (exogenous and endogenous factors combined)

Competing models	χ^2	*df*	χ^2/df	TLI	BBI	CFI	GFI	AGFI	RMSR
Group BM (n=132)									
0. Null model	2369.00	171	13.85	-	-		-	-	-
1. Basic model	151.70 (ρ=.046)	124	1.22	.98	.94	.99	.900	.847	.038
Group CM (n=226)									
Null model	2719.26	171	15.90	-	-		-	-	-
1. Basic model	140.88 (ρ=.143)	124	1.14	.99	.95	.99	.941	.910	.030

For Group BM, given the observed significance level of the chi-square statistics that was marginally close to .05 (χ^2 (124, n=132) =151.70, ρ=.046), an overall examination of other statistics and practical indices suggested good fit of the model[14] (χ^2/df =1.22, TLI = .98, BBI = .94, CFI = .99; GFI=.900, AGFI=.847, RMSR=.038). For Group CM, both statistics and practical indices showed good fit of the model (χ^2 (124, n=226) = 140.88, ρ=.143, χ^2/df =1.14, TLI = .99, BBI = .95, CFI = .99; GFI=.941, AGFI=.910, RMSR=.030). It was concluded, therefore, that the model represents a good measure of both exogenous and endogenous variables for the two groups, hence was regarded as the most plausible baseline model for the multi-group analysis in testing for the hypotheses (H3 and H4) of measurement equivalence between the two cultural groups.

The CTI model properties

Before moving on to the testing of invariance of the model, it is necessary to assess the model properties with regard to reliability and validity of the measurement.

Reliability. A general assessment of the reliability can be based on the squared multiple correlation (R^2) for each observed variable and the coefficient of determination for all the observed variables jointly (Byrne, 1989, p.54; Jöreskog and Sörbom, 1989, p.42). The R^2 provides an indication of the reliability of each observed measure with respect to its underlying latent construct, and the coefficient determination indicates how well the observed variables as a whole serve as measuring instruments for all the latent variables jointly (i.e., as a generalised indicator of reliability for the entire measurement model). These values should be greater than .5 or close to 1.00 to represent a good model (Byrne, 1989, p.54;). Table 5.13 provides these values from the final baseline model.

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[14] As Anderson and Gerbing (1988) noted: "In practice, the measurement model may sometimes be judged to provide acceptable fit even though the chi-square value is still statistically significant. This judgement should be supported by the values of the normed fit index and the other fit indices, particularly the root-mean-square residual index in conjunction with the number of large normalized or standardized residuals (and the absolute values of the largest ones)" (p.417).

Table 5.13 Standardised factor loadings (λ), t ratios, R^2s, composite reliability (ρ_c) and variance extracted (ρ_{ave}) for the final CTI baseline model

	Group BM (n=132)					Group CM (n=226)				
Items	**λ**	**t-ratio**	**R^2**	**ρ_c**	**ρ_{ave}**	**λ**	**t-ratio**	**R^2**	**ρ_c**	**ρ_{ave}**
Availability										
cti001	.902	11.168	.814	.835	.718	.586	6.777	.343	.653	.491
cti004	.789	9.582	.623			.799	7.962	.638		
Competence										
cti005	.922	13.565	.849	.907	.765	.782	12.994	.612	.747	.545
cti006	.899	13.006	.808			.598	9.189	.358		
cti007	.799	10.822	.639			.816	13.742	.665		
Consistency										
cti009	.901	12.305	.811	.765	.737	.825	13.099	.681	.665	.584
cti011	.814	10.715	.663			.698	10.895	.487		
Discreetness										
cti013	.592	7.251	.351	.716	.679	.744	12.572	.553	.749	.692
cti015	.965	14.075	.931			.896	16.517	.803		
cti016	.869	11.978	.755			.849	15.209	.720		
Integrity										
cti021	.893	12.800	.798	.910	.835	.826	14.612	.682	.666	.723
cti023	.934	13.754	.873			.884	16.124	.782		
Openness										
cti029	.886	11.300	.785	.879	.783	.870	14.620	.757	.667	.735
cti030	.884	11.271	.782			.845	14.083	.713		
Promise fulfilment										
cti039	.892	12.821	.796	.939	.885	.868	14.890	.753	.667	.746
cti040	.987	15.211	.975			.859	14.697	.738		
Overall trust										
cti034	.824	11.547	.679	.949	.863	.885	16.693	.784	.750	.795
cti035	.966	15.082	.933			.891	16.880	.795		
cti036	.988	15.731	.976			.897	17.057	.805		

Note: Total coefficient of determination is 1.00 for both groups.

As Table 5.13 reveals, all the squared multiple correlations (R^2s) for the measures of CTI wee over .50, only except one indicator (cti013, R^2=.351) for Group BM and two (cti001, R^2=.343; and cti006, R^2=.358) for Group CM. The total coefficient of determination was 1.00 for both groups. Overall, these values appeared to support the model's acceptable reliability for the measures of CTI.

Another index used to assess the psychometric properties of scaled measures is composite reliability (ρ_c)[15]. It is recommended that values greater than .60 to .80 should be considered adequate for composite reliability (Bagozzi and Baumgartner, 1994, p.403). The calculated values of composite reliability for the measures of CTI are provided in Table 5.13. It appeared that on average the reliability for Group BM was higher than Group CM. These values were all greater than .60, suggesting that the overall reliability is acceptable for the measure of each construct of conditions of inter-personal trust for the two Groups.

Convergent validity. This validity for the measures of the final baseline model was assessed by examining whether each indicator had a statistically significant factor loading on its posited underlying construct factor (Anderson and Gerbing, 1988, p.416). The factor loadings and the associated *t* values are provided in Table 5.13. These values revealed that all factor loading were high and significant, which supported the convergent validity of the scales of the final baseline CTI model.

Variance extracted. This estimate measures the amount of variance captured by a construct in relation to the variance due to random measurement error (Fornell and Larcker, 1981, p.46)[16]. These values (ρ_{ave}) for the final baseline CTI model are provided in Table 5.13. For each of the construct factors of the CTI, these estimates were over the suggested level of .50 (Fornell and Larcker, 1981) for both Group BM

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[15] Composite reliability is analogous to the coefficient alpha, which assesses the internal consistency of a measure, and is calculated as

$$\rho_c = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum \theta_{ii}}$$

where λ_i = standardised factor loadings, θ_{ii} = variance due to random measurement error for each loading (i.e., δ_i) (Bagozzi, 1994, p.324).

[16] The variance extracted estimate is calculated as

$$\rho_{ave} = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum \theta_{ii}}$$

where λ_i = standardised factor loadings, θ_{ii} = variance due to random measurement error for each loading (i.e., δ_i) (Fornell and Larcker, 1981, p.46; Hair, Jr., Anderson, Tatham and Black, 1995, p.642).

and Group CM, except for the factor "availability" which was marginally close to the .50 level for Group CM.

Discriminant validity. Assessment of discriminant validities of the CTI factors was carried out by first examining the correlations (Φ) between the constructs as provided in the LISREL output, then comparing the variance extracted estimates of the factors with the square of the correlation between the factors (See Fornell and Larcker, 1981; Netemeyer, Hohnston and Burton, 1990). If the variance extracted is greater than the square of the correlation between the two constructs, evidence of discriminant validity exists. The correlation estimates between the constructs of the conditions of trust (CTI) are provided in Table 5.14. The values in the brackets are the calculated squares of the correlations.

Inspection of Table 5.14 indicated that all the correlations were significantly less than 1.0 (the corresponding t-value for each correlation estimates are greater than 2). The variance extracted estimates (see Table 5.13) exceeded the squares of the correlation between the constructs of CTI for both Group BM and Group CM. This result provided support for the discriminant validity of the seven constructs of the conditions of inter-personal trust and the construct of the overall trust as measured by the final baseline model of CTI.

It is noted that for Group CM the variance extracted estimates were .795 for "trust" and .545 for "competence" (see Table 5.13), which marginally exceed the square of the correlation between the two construct (φ_{31}=.736, φ_{31}^2=.542) (see Table 5.14). This may be explained by the fact that the confidence interval of cti006 (i.e., two standard errors, δ_3=.642) contained a value of 1, which suggests that the item cti006 does not present the construct "competence" as well as the other two indicators (cti005 and cti007). The item was retained in the model since its effect was regarded trivial to the measurement of the model.

Table 5.14 Correlation estimates between the constructs of CTI (based on the final baseline model)

Group BM	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	ξ_6	ξ_7	ξ_8
Trust(ξ_1)	1							
Availability(ξ_2)	.590 (.348)	1						
Competence(ξ_3)	.726 (.527)	.552 (.305)	1					
Consistency(ξ_4)	.707 (.450)	.586 (.343)	.770 (.593)	1				
Discreetness(ξ_5)	.578 (.334)	.379 (.144)	.541 (.293)	.504 (.254)	1			
Integrity(ξ_6)	.827 (.684)	.528 (.279)	.663 (.440)	.673 (.453)	.581 (.338)	1		
Openness(ξ_7)	.494 (.244)	.405 (.164)	.554 (.307)	.469 (.220)	.293 (.086)	.567 (.321)	1	
Promise fulfilment(ξ_8)	.780 (.610)	.577 (.333)	.704 (.496)	.623 (.388)	.468 (.219)	.658 (.433)	.468 (.219)	1
Group CM	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	ξ_6	ξ_7	ξ_8
Trust(ξ_1)	1							
Availability(ξ_2)	.348 (.121)	1						
Competence(ξ_3)	.736 (.542)	.319 (.102)	1					
Consistency(ξ_4)	.737 (.543)	.305 (.093)	.756 (.572)	1				
Discreetness(ξ_5)	.703 (.494)	.453 (.205)	.633 (.401)	.663 (.440)	1			
Integrity(ξ_6)	.841 (.707)	.390 (.152)	.664 (.441)	.716 (.513)	.713 (.508)	1		
Openness(ξ_7)	.612 (.375)	.284 (.081)	.432 (.187)	.500 (.25)	.477 (.228)	.731 (.534)	1	
Promise fulfilment(ξ_8)	.682 (.465)	.392 (.154)	.676 (.457)	.596 (.355)	.591 (.349)	.593 (.352)	.400 (.16)	1

Note: The values in the brackets are the calculated squares of the correlations.

Testing for measurement and structural invariance of the constructs

The hypothesis of cross-cultural equivalence in the measures of CTI between British and Chinese managers were tested by simultaneous multi-group testing as described before. This involved specifying the complete model (measurement and structural) and testing the hypotheses of measurement (H3) and structural (H4) equivalence between the two groups. The complete model is based on the modified best-fit seven-factor baseline model for exogenous variables, and the endogenous variable was measured by three indicators. The model is represented in Figure 5.6. The pattern matrixes of parameters are presented in Table 5.15. For purposes of identification, the diagonal of the phi matrix was set at 1.0, giving all factors unit variances, rather than arbitrarily fixing the pattern coefficient for one indicator of each factor at 1.0 (i.e., reference indicator) (Anderson and Gerbing, 1988, p.415).

Several approaches have been proposed in the literature to the test of measurement invariance. For instance, one can begin with an overall test of the equality of covariance structures across groups (i.e., H_o: $\Sigma_1 = \Sigma_2 = \ldots \Sigma_G$ where G is the number of groups) (Jöreskog, 1971). Other researchers (e.g., Byrne, 1989, p.127) contend that such omnibus test is of little assistance in testing for invariance across groups and should not be a necessary prerequisite to the conduct of relatively more specific hypotheses bearing on factorial invariance. Byrne (1989) and Byrne, Shavelson and Buthén (1989) suggested a sequential approach to test for the invariance of (1) the number of factors (H_o: $\Lambda_{1k} = \Lambda_{2k} = \ldots \Lambda_{Gk}$ where k = number of factors); (2) the factor-loading pattern (H_o: $\Lambda_1 = \Lambda_2 = \ldots \Lambda_G$); (3) the factor variances and covariances (H_o: $\Phi_1 = \Phi_2 = \ldots \Phi_G$); and (4) the error/uniqueness (H_o: $\Theta_1 = \Theta_2 = \Theta_G$).

In contrast to the above approaches, some other researchers argue that the invariance of the common factor "correlation" or covariance structure is not an essential requirement for testing invariance, and the test of measurement invariance across groups is equivalent to the test of whether the factor loading matrix is invariant across groups (e.g., Alwin and Jackson, 1981; Sörbom, 1974). This means that there may well be differences in factor variances and covariances across samples, but such

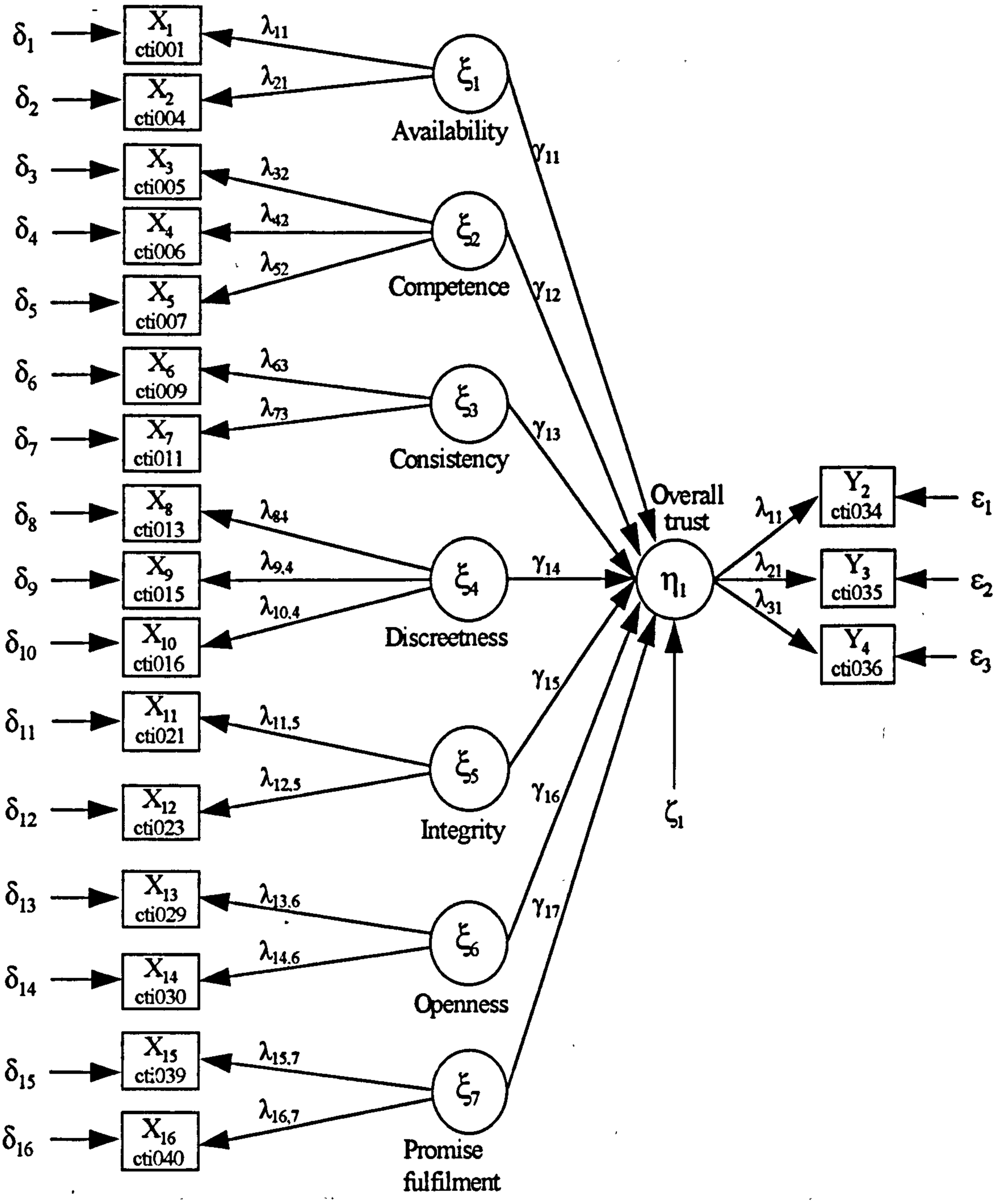

Figure 5.6 Seven-factor structural model of CTI

(Note: The latent exogenous variables are assumed to be correlated but without formal causal relationship between them. The conventional curved lines linking the latent variables to indicate the correlations are omitted here to reduce clutter.)

Table 5.15 Pattern of LISREL parameters for model fitting (CTI): Seven-factor model

Lambda X matrix

X	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	ξ_6	ξ_7
cti001: X_1	λ_{11}	0	0	0	0	0	0
cti004: X_2	λ_{21}	0	0	0	0	0	0
cti005: X_3	0	λ_{32}	0	0	0	0	0
cti006: X_4	0	λ_{42}	0	0	0	0	0
cti007: X_5	0	λ_{52}	0	0	0	0	0
cti009: X_6	0	0	λ_{63}	0	0	0	0
cti011: X_7	0	0	λ_{73}	0	0	0	0
cti013: X_8	0	0	0	λ_{84}	0	0	0
cti015: X_9	0	0	0	$\lambda_{9,4}$	0	0	0
cti016: X_{10}	0	0	0	$\lambda_{10,4}$	0	0	0
cti021: X_{11}	0	0	0	0	$\lambda_{11,5}$	0	0
cti023: X_{12}	0	0	0	0	$\lambda_{12,5}$	0	0
cti029: X_{13}	0	0	0	0	0	$\lambda_{13,6}$	0
cti030: X_{14}	0	0	0	0	0	$\lambda_{14,6}$	0
cit039: X_{15}	0	0	0	0	0	0	$\lambda_{15,7}$
cti040: X_{16}	0	0	0	0	0	0	$\lambda_{16,7}$

Phi matrix

Φ	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	ξ_6	ξ_7
ξ_1	1						
ξ_2	φ_{21}	1.					
ξ_3	φ_{31}	φ_{32}	1				
ξ_4	φ_{41}	φ_{42}	φ_{43}	1			
ξ_5	φ_{51}	φ_{52}	φ_{53}	φ_{54}	1		
ξ_6	φ_{61}	φ_{62}	φ_{63}	φ_{64}	φ_{65}	1	
ξ_7	φ_{71}	φ_{72}	φ_{73}	φ_{74}	φ_{75}	φ_{76}	1

Gamma matrix

Γ	ξ_1	ξ_2	ξ_3	ξ_4	ξ_5	ξ_6	ξ_7
η_1	γ_{11}	γ_{12}	γ_{13}	γ_{14}	γ_{15}	γ_{16}	γ_{17}

Table 5.15 Pattern of LISREL parameters for model fitting (CTI): Seven-factor model (continued)

Theta Delta matrix

Θ_δ	δ_1	δ_2	δ_3	δ_4	δ_5	δ_6	δ_7	δ_8	δ_9	δ_{10}	δ_{11}	δ_{12}	δ_{13}	δ_{14}	δ_{15}	δ_{16}
δ_1	δ_1															
δ_2	0	δ_2														
δ_3	0	0	δ_3													
δ_4	0	0	0	δ_4												
δ_5	0	0	0	0	δ_5											
δ_6	0	0	0	0	0	δ_6										
δ_7	0	0	0	0	0	0	δ_7									
δ_8	0	0	0	0	0	0	0	δ_8								
δ_9	0	0	0	0	0	0	0	0	δ_9							
δ_{10}	0	0	0	0	0	0	0	0	0	δ_{10}						
δ_{11}	0	0	0	0	0	0	0	0	0	0	δ_{11}					
δ_{12}	0	0	0	0	0	0	0	0	0	0	0	δ_{12}				
δ_{13}	0	0	0	0	0	0	0	0	0	0	0	0	δ_{13}			
δ_{14}	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{14}		
δ_{15}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{15}	
δ_{16}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	δ_{16}

Lambda Y matrix

Y	η_1
cti034: Y_1	λ_{11}
cti035: Y_2	λ_{21}
cti036: Y_3	λ_{31}

Beta matrix

B	η_1
η_1	0

Theta Epsilon matrix

Θ_ε	ε_1	ε_2	ε_3
ε_1	ε_1		
ε_2	0	ε_2	
ε_3	0	0	ε_3

Psi matrix

Ψ	ζ_1
ζ_1	ψ_{11}

sample specific variances have no direct bearing on whether the scale behaves the same way across samples as a measurement instrument (cf. MacCallum and Tucker, 1991). Following this viewpoint, Reise, Widaman and Pugh (1993) suggested that the test of measurement invariance across groups be based on the hypothesis test of factor-loading pattern (i.e., H_o: $\Lambda_1 = \Lambda_2$) (cf. Mullen, 1995). This approach was employed for the tests for measurement invariance in this research. Hence, testing of the hypothesis H3 was focused on the invariance of (1) The number of factors (H_o: $\Lambda_{bm,k=7} = \Lambda_{cm,k=7}$); and (2) The factor-loading pattern (H_o: $\Lambda_{bm} = \Lambda_{cm}$). The hypothesis (H4) of invariance of the causal path coefficients from exogenous to endogenous variables (H_o: $\Gamma_{bm} = \Gamma_{cm}$) was also tested with the approach suggested by Jaccard and Wan (1996).

The process of testing the invariance hypotheses followed from the nested goodness-of-fit test procedures as described before. The tests were first carried out with the all-exogenous-variable measurement model including "overall trust" (Byrne, 1989, p.127; Long, 1983a, p.21) based on the well-fit final baseline model described in Table 5.9. Then, the endogenous variable was specified in the structural model to test the invariance of the causal path coefficients from exogenous to endogenous variables (Jaccard and Wan, 1996, p.24). The LISREL multi-group simultaneous method was employed for the analysis, with the well-fit final model from Table 5.12 as the baseline model. Table 5.16 provides the results from the simultaneous tests of the all-exogenous-variable measurement model.

Although the chi-squares were significant for both the unconstrained and constrained simultaneous-test models, the difference of chi-square between the two models was not significant ($\Delta\chi = 29.98$, $\Delta df = 19$, $\rho > .05$), and the practical criteria also showed satisfactory fit ($\chi^2/df < 2$, TLI = .99, BBI = .94, CFI = .99 in both models). In the social sciences research, testing of hypothesised models should only be directed towards approximations to reality rather than searching exact statement of truth (Anderson and Gerbing, 1988; Byrne, Shavelson and Buthun, 1989; Cudeck and Browne, 1983; Jöreskog, 1982). Given the well-fit baseline model with the two samples, it was judged to be appropriate to regard the chi-square statistics as more

informal indices of goodness of fit (Loehlin, 1992, p.86), and to direct the efforts toward finding a substantively reasonable approximation to the data by relying more heavily on the practical indices of goodness of fit (Byrne, Shavelson and Buthun, 1989, p.461).

Table 5.16 Simultaneous tests of the invariance of CTI measurement across Group BM and Group CM (all-exogenous-variable measurement model)

Competing models	H_o	χ^2	*df*	$\Delta\chi^2$	Δdf	χ^2/df	TLI	BBI	CFI	H_o rejected?
0. Null model		5089.20	342	-	-	14.88	-	-		
1. Baseline model: Number of exogenous factors invariant	$\Lambda_{bm,k=7} = \Lambda_{cm,k=7}$	290.08 ($\rho<.05$)	248	-	-	1.17	.99	.94	.99	No
2. Constrained model: Number of exogenous factors and pattern of loadings invariant	$\Lambda_{bm} = \Lambda_{cm}$	320.06 ($\rho<.05$)	267	29.98 ($\rho>.05$)	19	1.20	.99	.94	.99	No

With the above considerations, the result of the multi-group simultaneous test was regarded as indicating acceptable fit of the model from a practical standpoint. Therefore, the hypotheses of equal numbers of factors and invariant factor-loading patterns across Group BM and Group CM cannot be rejected. This gives support to the decision that H3 was not rejected based on the seven-factor model specified in Figure 5.6. It suggests that the measures of conditions of trust and the overall trust behave in the same way for both British and Chinese managers, hence construct equivalence and measure equivalence have been established between British and Chinese managers based on this measurement model.

The structural model fitting was implemented by the nested-model-fitting approach, and results are presented in Table 5.17 (Selected LISREL outputs for this final model are given in Appendix 2). Given the significant chi-square for the baseline model,

other indices indicated a good fit of the model (χ^2/df <2, TLI = .99, BBI = .94, CFI = .99). From the same standpoint as the above, the model fit was regarded as tenable with the sample data based on the fit indices except the chi-square. In the second model, the causal coefficients matrix was constrained to be equal across the two groups, and the overall chi-square was compared with the baseline model. As it turns out, the difference in chi-square ($\Delta\chi^2$) of 5.23 with 7 degrees of freedom (Δdf) was not significant (ρ>.05). This suggests that there is no significant interaction effect caused by the difference of the two groups, i.e., the path coefficients from the conditions of trust to the overall trust are not significantly different between the British and Chinese managers. On the basis of these results, the hypothesis H4 cannot be rejected. This suggests that the perceived overall trust can be explained by the seven factors of conditions of inter-personal trust in the same way in British and Chinese organisations. For convenience of communication, the unstandardised parameter estimates (Jaccard and Wan, 1996, p.38; Stoolmiller, Duncan and Patterson, 1995, p.246) for the modified seven-factor CTI structural model as indicated in Figure 5.6 are represented together with particular paths (Hoyle and Panter, 1995, p.169) in Figure 5.7 for Group BM and Figure 5.8 for Group CM.

Table 5.17 Simultaneous tests of the invariance of CTI structural model across Group BM and Group CM

Competing models	H_o	χ^2	*df*	$\Delta\chi^2$	Δdf	χ^2/df	TLI	BBI	CFI	H_o rejected?
0. Null model		5089.20	342	-	-	14.88	-	-		
1. Baseline model		290.08 (ρ<.05)	248	-	-	1.17	.99	.94	.99	
2. Constrained model: Causal coefficients from the exogenous variables to the endogenous variable invariant	$\Gamma_{bm} = \Gamma_{cm}$	295.31 (ρ<.05)	255	5.23 (ρ>.05)	7	1.16	.99	.94	.99	No

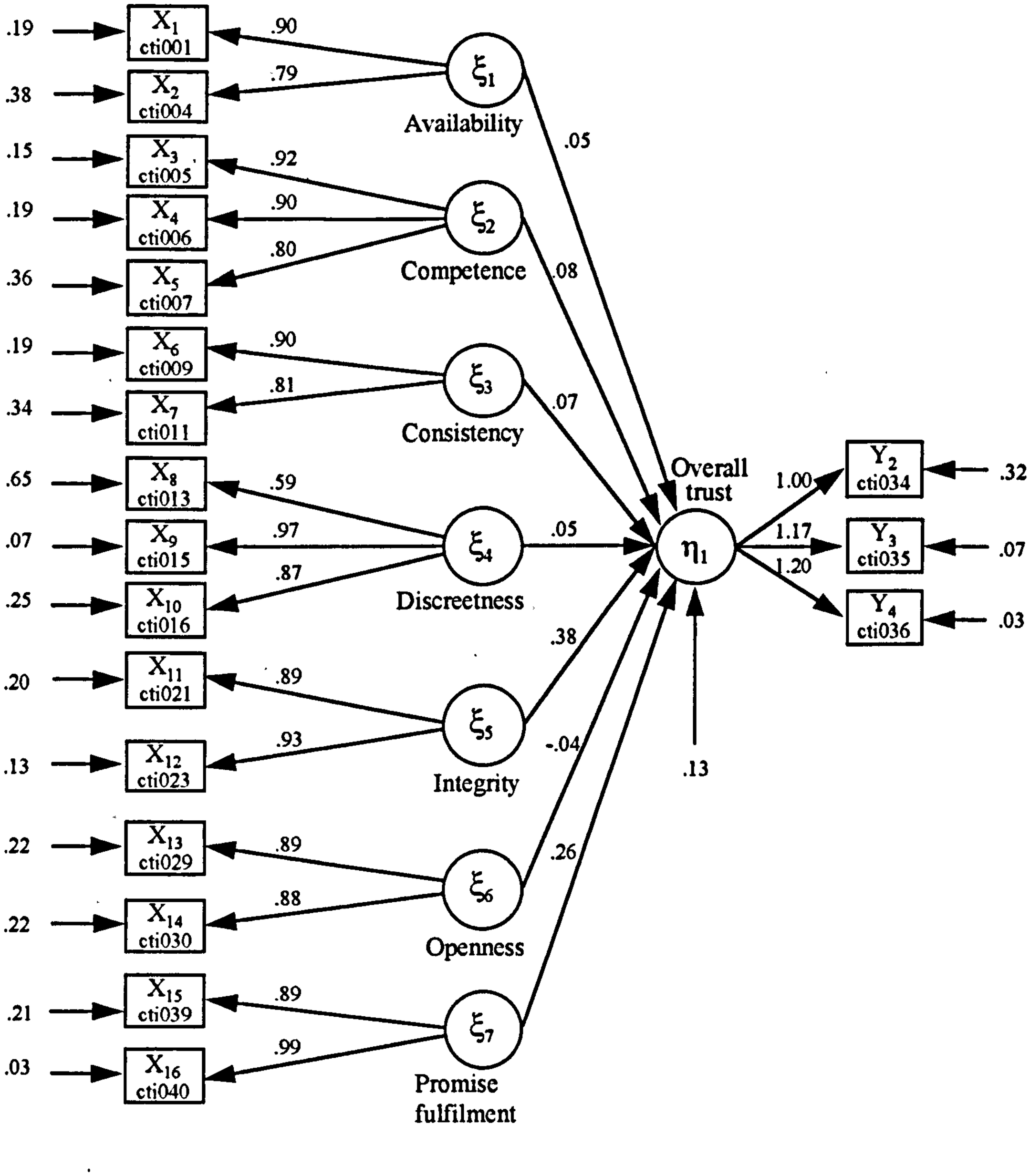

Figure 5.7 Unstandardised parameter estimates for the seven-factor CTI structural model based on the sample Group BM

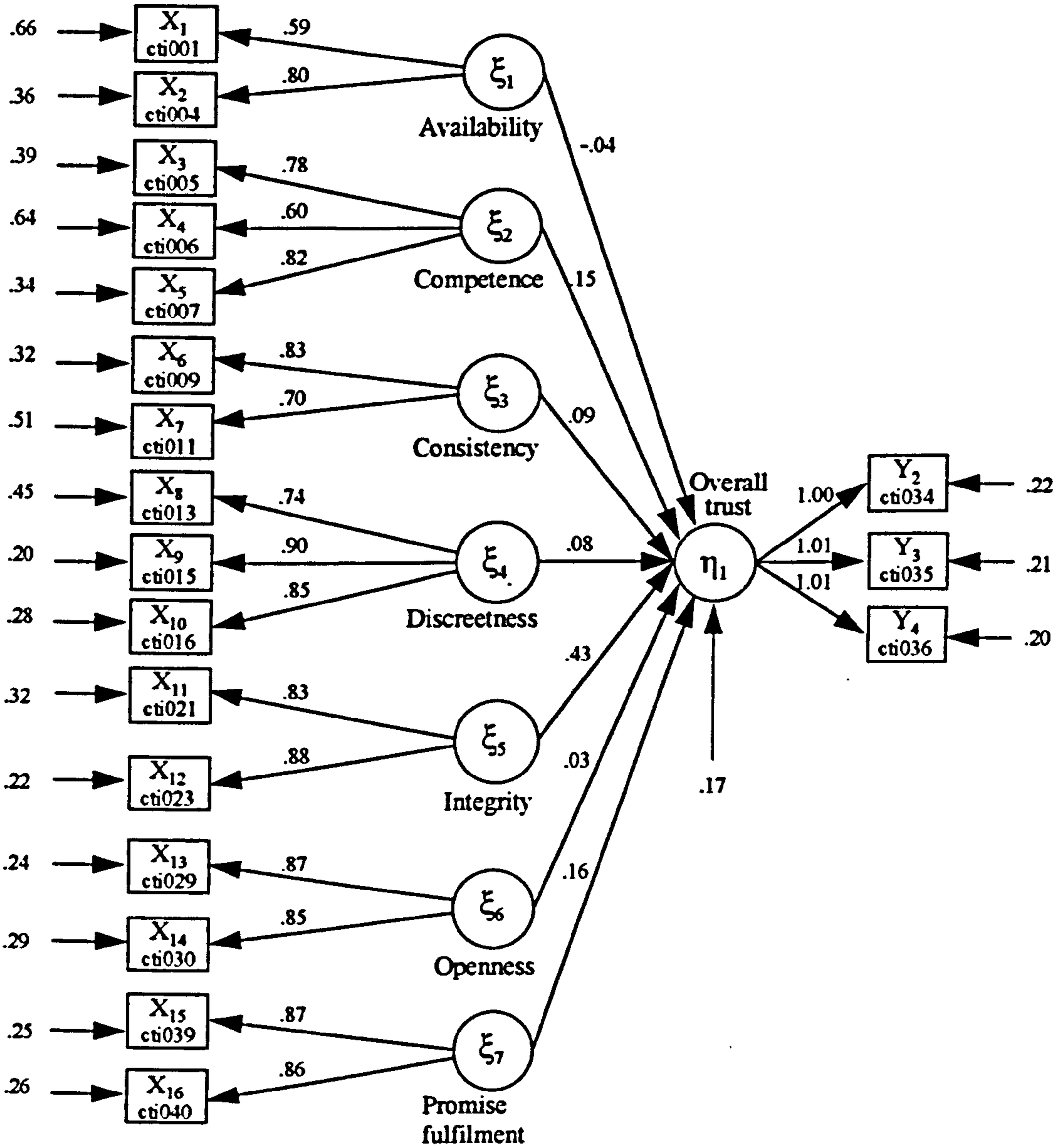

Figure 5.8 Unstandardised parameter estimates for the seven-factor CTI structural model based on the sample Group CM

It is worth noting that for both Group BM and Group CM the *t* values for Gamma estimates were significant (ρ>2) only for "integrity" and "promise fulfilment", suggesting only these two factors have a significant impact on the overall trust. This result appears to inspire a further model exploration based on a heuristic approach, which is a related topic of interest but beyond the scope of the present research. The current analyses were only intended to respecify a measurement model of the CTI with cross-cultural equivalence for the analyses of the conditions of inter-personal trust in the working relationships in SBJVs.

5.2.1.4 Discussion

The objective of this section was to investigate the construct validity of the CTI scales and their factor invariance across the British and Chinese cultural groups. The evaluation process followed from the research design of moving from "imposed etic" to "derived etic". The initial evaluation of the original CTI scales by the EFA failed to produce support for the original scales with the data from British and Chinese samples. A modified model of the CTI scales was then derived and validated by the EFA with the two samples. The CFA was employed to test the modified model for its fit with the data from the two samples.

The CFA tests resulted in rejection of the hypotheses H1 and H2. These results provided empirical evidence that the measure instrument of CTI generated and validated in the American culture cannot be directly used as an culture-free ("imposed etic") instrument to measure the conditions of inter-personal trust in British and Chinese cultures. This suggests that care should be taken in using measurement instrument in cross-cultural research. A proper validation process should be carried out to identify the cross-cultural validity of the original measurement instrument.

For the purpose of this research, a heuristic approach was used to search for the "derived etic" from within the original CTI measure scales. The CFA model-generating approach was employed and resulted in a respecified seven-factor nineteen-item model (as illustrated in Figure 5.6) for measuring the conditions of

inter-personal trust corresponding to the hypothesised dimensions of the CTI. The CFA test provided acceptable fit of the model (as summarised in Table 5.12) with the data from British and Chinese samples. With the final seven-factor nineteen-item model, a series of simultaneous multi-group tests provided support for the hypotheses H3 (as summarised in Table 5.16) and H4 (as summarised in Table 5.17). The non-rejection of the hypotheses H3 and H4 provided evidence for the cross-cultural equivalence (i.e., "derived etics") of the respecified seven-factor nineteen-item measure scales derived from the original CTI instrument by the CFA in measuring the conditions of inter-personal trust in British and Chinese cultures.

It should be noted that the final model does not provide collectively exhaustive measurement of the conditions of inter-personal trust as categorised by the original CTI, i.e., the factors "fairness" and "loyalty" were excluded because they cannot be measured with equivalence across British and Chinese cultures based on the measure items. In addition, as a result of this model respecification, some measurement items were "lost", for instance, the original four-item scales were reduced to two-item scales for some factors. Although it can be believed that the common core components were represented by the validated items, the reduction of items may pose a potential difficulty in capturing the adequate domain of the construct, i.e., "construct underrepresentation" (Embretson, 1983, ctd. in van de Vijver and Leung, 1997). For the present research these are acknowledged as limitations but should not undermine the overall validity of the results. In the future research efforts need to be made to generate measurement scales within the cultures under study in order to obtain an optimal size of the construct domain encompassed by the measurement instrument.

On the basis of the sample data it was also found that only two factors "integrity" and "promise fulfilment" appeared to have a significant impact on the overall trust for British and Chinese managers in their home-country organisations (i.e., not involved in SBJVs). This result was not surprising since the causal relations between the conditions of trust and overall trust are expected to be subject specific. In other words, with different populations under study the causal relations may not be the

same. The respecified model needs to be cross-validated with new data from different samples in future research. For the purpose of the present exploratory work, it was employed as a tentative measurement model for comparative analyses as reported in the following sections.

5.2.1.5 Summary

This sub-section (5.2.1) focused on evaluation of the CTI measurement instrument for its cross-cultural validity for use in the British and Chinese cultures. The analyses with EFA and CFA confirmed that the original CTI measurement scales developed in the USA are not applicable in the British and Chinese cultures. With the heuristic approach guided by the principle of moving from "imposed etics" to "derived etics", a respecified seven-factor model of the conditions of inter-personal trust was derived with LISREL multi-sample technique. This respecified model possesses construct equivalence and validity and reliability across the British and Chinese cultures. Given certain limitations imposed by the potentially limited sampling domain of the original CTI instrument, the respecified seven-factor CTI measurement scales can be used as a valid tentative measurement instrument for examining the key issues with SBJVs. New sampling data should be used to cross validate the respecified model in the future research. When resources and time permit, efforts should be made to generate measurement scales within the cultures under the study in order to maximise the domain of constructs that may have diverse components in different cultures. However, with resource and operational constraints, existing measurement instrument can be used on condition that it is validated with sophisticated techniques such as the LISREL multi-sample approach with sampling data from the cultures under study.

5.2.2 Comparative analyses of the conditions of inter-personal trust

As described at the beginning of the chapter, the examination of the conditions of inter-personal trust were carried out with comparative methods. These comparisons were based on the concepts of "static-group comparison design" and "non-equivalent control group design". The "static-group comparison design" was used for comparison between the sub-samples of British and Chinese managers involved in SBJVs (Group BM_{jv} and Group CM_{jv}). The "non-equivalent control group design" was used for comparisons between British managers not involved in SBJVs (Group BM) and those involved in SBJVs (Group BM_{jv}), and between Chinese managers not involved in SBJVs (Group CM_{jv}) and those involved in SBJVs (Group CM_{jv}). These analyses are presented in the following sub-sections.

5.2.2.1 Analysis with Group BM_{jv} and Group CM_{jv}

To enhance the understanding of the key issue of trust in SBJV working relationships, it is important to examine what conditions lead to trust in their partners from both British and Chinese manager's perspectives. Furthermore, the relative importance of the factors need to be investigated to provide insights for British and Chinese managers to improve their mutual trust for a harmonious working relationship that is necessary for successful performance of the SBJVs. In order for such analyses to bear both theoretical and practical implications, it is necessary first to test for the significance of the impact of the factors of the conditions of inter-personal trust on the overall level of trust. For this purpose a general hypothesis was tested by employing multiple regression analysis:

H5 There exists a set of factors as measured by the CTI instrument that have impacts on the level of inter-personal trust for both British and Chinese managers in SBJVs.

Defining the model

The factor variables were defined by the respecified CTI measurement model resulting from the previous EFA and CFA validation. The respecified scale of CTI used for regression analysis is reproduced in Table 5.18 with the reassessed coefficient alpha values reported in the last two columns.

Table 5.18 The respecified CTI measurement scale and reliability assessment

Factors	Items	Cronbach alphas	
		Group BMjv (n=47)	Group CMjv (n=35)
Availability	cti001 cti004	.46	.74
Competence	cti005 cti006 cti007	.89	.86
Consistency	cti009 cti011	.91	.67
Discreetness	cti013 cti015 cti016	.93	.93
Integrity	cti021 cti023	.87	.92
Openness	cti029 cti030	.92	.70
Promise fulfilment	cti039 cti040	.93	.63
Overall trust	cti034 cti035 cti036	.92	.94

Given the earlier evaluation of the CTI measurement scale by EFA and CFA, this reassessment by Cronbach's alpha with data from Group BM_{jv} and Group CM_{jv} provided certain cross-validation of the measurement. The alpha values assessed with the data from the two sub-sample groups indicated acceptable reliability for the

measurement of the variables except the relatively low value (.46) for "availability" with Group BM_{jv}. This variable was accepted for the present analysis since its alpha value was close to the minimum threshold of .50 for the present research (see the discussion on reliability in Chapter 4), although admittedly further cross validation of the scale with new data is needed in the future research.

The values of the variables were calculated by summated scales[17] based on this respecified measurement scale. To test H5, the overall level of trust was defined as the dependent variable, and the seven factors of conditions of inter-personal trust were defined as independent variables. Multiple regression analysis based on ordinary least squares (OLS) was used with the two sub-samples (Group BM_{jv} and Group CM_{jv}) separately to estimate the relationship between the independent factors (the conditions of inter-personal trust) and the dependent factor (overall level of trust) from the perspectives of British and Chinese managers respectively[18]. The regression model was estimated for each independent factor in an equation of the form:

$$Y = b_0 + b_1X_1 + b_2X_2 + \ldots + b_nX_n + e$$

where Y = Dependent variable (overall trust)

b_n = regression coefficient

X_n = Independent variable (the seven factors of the conditions of trust)

e = a random disturbance term.

---

[17] By summated scales, the measurement items loading highly on the factor variables were averaged. In this research the measurement items in the validated model were confirmed by EFA and CFA as having high and significant loadings on the factors of CTI. This approach was regarded appropriate in this research because it compromises the advantages and disadvantages of using factor scores or the single surrogate variable (Hair, Jr., Anderson, Tatham and Black, 1995, p.390).

[18] The reason for separate estimation with each sub-sample is that the dependent variable (overall trust) measures trust in different target persons from perspectives of two different populations, i.e., the British managers' trust in Chinese managers and the Chinese managers' trust in British managers. The dependent variable is different in category when used with the two sub-samples although they carry the same label. (cf. Johnson, Cullen, Sakano and Takenouchi, 1996).

Data evaluation

For regression analysis to be valid, several requirements must be met. First, the sample size should be adequate relative to the numbers of variables that are under study. Unfortunately there is no hard rule about this (Hays, 1994). Some authors suggest the minimum ratio of 3 to 5 observations for each independent variable in the variate (e.g., Hair, Jr., Anderson, Tatham and Black, 1995, p.105; Speed, 1994, p.96), some others recommend the desired ratio of 15 to 20 (e.g., Stevens, 1996, p.72; Hays, 1994, p.723). With seven independent variables to be estimated in this study, the sizes of Group BM_{jv} (47 valid responses) and Group CM_{jv} (35 valid responses) were considered adequate according to the minimum ratio and statistic power for regression estimates (Cohen and Cohen, 1983, p.61)[19].

Second, the basic assumptions of regression analysis involve linearity between dependent and independent variables and independence, constant variance and normality of the errors. For the present analysis, scatterplots of the individual variables indicated various extent of linear relationships between the dependent variable and the independent variables. The test of homoscedasticity was left after the model estimation since the factors are metric variables, which are best examined through the analysis of the residuals (Hair, Jr., Anderson, Tatham and Black, 1995, p.74). Other evaluations of model adequacy were carried out after the model estimation.

With SPSS variable selection procedures, forward selection, backward elimination and stepwise selection were used to determine which of the seven independent variables to include in the final regression equation. The different procedures do not necessarily yield the same equation with the same number of corresponding variables. The final model with each sample group was chosen among several models based on

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[19] It should be noted that recent research (Mason and Pereault, 1991) has identified that the impact of sample size on tests tends to increase test conservatism, i.e., if regression based on a small sample does lead to significant findings, these findings are likely to be repeated with larger samples rather than overturned (Speed, 1994). As Speed suggests, "For researchers with small samples, this implies that regression is worth doing, since if you do find something, it is far more likely to be true than not" (p.96).

the criteria of assessing the overall relationships of the variables and the basic assumptions, as well as interpretability and parsimony. The regression estimates are reported in Table 5.19 (only the independent variables with significant coefficients are listed), including the *t* statistics and regression results along with some additional diagnostic statistics (R^2, *F* ratio and tolerance and VIF) and standardised regression coefficients.

Table 5.19 Regression estimates for British and Chinese managers in the SBJVs

Independent Variable	Regression Coefficient (b)	Standard Error	t-Statistic ($H_o b_1 = 0$)	Standardised Regression Coefficient	Toler-ance	VIF
From British managers' perspective						
Availability	.412	.156	2.647**	.326	.862	1.160
Integrity	.410	.110	3.722***	.458	.862	1.160
(Adjusted R^2 = .400 F = 16.335, ρ < .000 N = 47)						
From Chinese managers' perspective						
Competence	.152	.092	1.655†	.200	.749	1.335
Integrity	.397	.123	3.220***	.446	.571	1.752
Openness	.316	.104	3.026***	.372	.725	1.379
(Adjusted R^2 = .638 F = 20.410, ρ < .000 N = 34)						

* ρ < .10, ** ρ < .05, *** ρ < .01, † ρ = .108. Missing value excluded listwise.

A basic principle in assessing adequacy of the regression model is to examine whether the model can be substantively improved within the conditions set by the available data (Cohen and Cohen, 1983, p.125). The estimated residuals associated with each of the equations were examined for systematic behaviour. Inspection of the residual plots indicated no violations of the assumptions for the two final regression models. It should be noted that, as Table 5.19 shows, the observed significance level for the coefficient for "competence" associated with Group CM_{jv} was marginally above the level of .10 (ρ = .108). This estimate was regarded as significant and was entered into

the final equation based on judgement of other statistics for model fit and interpretability since the probability of type I error was only marginally over a conventional .10 level.

In the present analysis a major concern was multicollinearity that may result from a certain amount of informal correlations between the independent variables since the theory posits that the dimensions representing the conditions of trust should not be mutually orthogonal (Butler, Jr., 1991, p.651). The multicollinearity problem can result in making it difficult to obtain accurate estimates of the individual effects of variables, i.e., the conditions of trust. It has been noted in the methodological literature (Mason and Perreault, Jr., 1991) that with behavioural constructs it is unrealistic to assume that independent variables will always be strictly orthogonal at the population level; the practical issue is to determine the point between perfect collinearity and no collinearity, at which the degree of collinearity becomes "harmful".

In this regard two indices are commonly used: the tolerance and the variance inflation factor (VIF). The tolerance value indicates the proportion of the variance for the selected independent variable that is not due to the other independent variables. The variance inflation factor (VIF) is closely related to the tolerance and is defined as the reciprocal of the tolerance. A tolerance value close to 1.00 means that it is safe in including the variable in the equation, whereas a value close to 0 suggests that including the variable run the risk of multicollinearity (Hays, 1994, p.723). A common cut-off threshold is a tolerance value not less than .10 and the corresponding VIF value not above 10 (Hair, Jr., Anderson, Tatham and Black, 1995, p.127). In this analysis, the tolerance and VIF values for both final equations were within the acceptable range, as Table 5.19 shows. This confirmed that interpretation of the regression variate coefficients in the final models should not be affected adversely by multicollinearity.

Other statistics indicating the goodness of fit of the model are also presented in Table 5.19. The adjusted coefficient of determination (adjusted R^2) modifies measure of the coefficient of determination (R^2) by taking into account the number of predictor

variables included in the regression equation. The F statistic and its observed significant value (ρ) provide information for testing the hypothesis that the population R^2 is 0. On inspection of these statistics, they indicated acceptable goodness of fit of the two final regression models for the populations associated with Group BM_{jv} and Group CM_{jv}.

Results

The general hypothesis H5 concerns a set of factors as measured by the CTI instrument that have an impact on the level of inter-personal trust in Sino-British joint ventures from a British manager's perspective (i.e., British managers' trust in Chinese managers) as well as from a Chinese manager's perspective (i.e., Chinese managers' trust in British managers). As Table 5.19 shows, the final regression equation testing H5 from the British manager's perspective was significant for two variables "availability" and "integrity" with an F-statistic of 16.335 (ρ < .000). The two variables explained 40% of the variance in British managers' trust in Chinese managers (Adjusted R^2 = .400). This value was moderate but not surprising since only two predictor variables were entered in the equation. A possible explanation is that these two variables alone may not be adequate to account for all the variation in the dependent variable "trust" (cf. Jain, 1994). The statistically significant standardised coefficient estimates of .458 for "integrity" and .326 for "availability" indicated support for H5 in terms of the two variables. However, the other four variables ("consistency", "discreetness", "openness" and "promise fulfilment") were not entered into the final equation due to non-significant parameter estimates, hence H5 cannot be supported with regard to the four variables. The estimated regression relationship for British managers' trust in Chinese managers in the SBJVs is expressed as:

(EQ 5.2.1)

British manager's trust in Chinese manager = .412 (Chinese manager's availability)
+ .410 (Chinese manager's integrity)

The interpretation of this equation is that both independent variables (Chinese manager's "availability" and "integrity") have a positive effect upon British managers' trust in Chinese mangers. An increase in any of these two variables by the Chinese manager is expected to increase the British manger's trust in the Chinese manager. A direct comparison on the basis of the unstandardised regression coefficient[20] did not indicate a substantial difference between the variables "availability" and "integrity". This suggests that when working in a SBJV, a British manager's trust in a Chinese manager is positively affected by the extend to which the Chinese manager demonstrates availability and integrity. This further suggests that to improve trust from British partners, Chinese managers should try to maintain their integrity and make themselves available when British partners need them.

The final regression equation testing H5 from a Chinese manager's perspective was significant with an F-statistic of 17.006 ($\rho < .000$) for three variables: "competence", "integrity" and "openness". The three variables explained 64% of the variance in Chinese managers' trust in British managers (Adjusted $R^2 = .638$). The statistically significant standardised coefficient estimates were .200 for "competence", .446 for "integrity" and .372 for "openness", which indicated support for H5 in terms of these three variables. However, the other four variables ("availability", "consistency", "discreetness" and "promise fulfilment") were not entered into the final equation due to non-significant parameter estimates, hence H5 cannot be supported with regard to the four variables. The estimated regression relationship for Chinese managers' trust in British managers in the SBJVs is expressed as:

(EQ 5.2.2)

Chinese manager's trust in British manager = .152 (British manager's competence)
+ .397 (British manager's integrity)
+ .316 (British manager's openness)

[20] If the variables possess construct equivalence across the samples, the unstandardised regression coefficients should be utilised for interpretation and substantive inference because they reflect an "etic" comparison standard (see Bollen, 1989, p.126; Singh, 1995). The CTI instrument exhibited cross-cultural construct equivalence through CFA, hence the unstandardised coefficients were desirable for direct between-group comparisons.

This equation indicates that the three factors, "competence", "integrity" and "openness", have a positive effect on Chinese managers' trust in British managers. The interpretation is that an increase in the variables of "competence", "integrity" and "openness" by the British manager is expected to increase the Chinese manager's trust in the British manager. A direct comparison based on the unstandardised regression coefficient indicated that the variable "integrity" was the most important among all the variables. The next important variable was "openness", followed by the variable "competence" in relative terms. These results suggest that when working in a SBJV, a Chinese manager's trust in a British manager is mostly affected by the extend to which the British manager demonstrates integrity. Although less import than "integrity", a British manager's openness and competence are still influential in gaining trust from the Chinese counterpart.

Since "integrity" was entered into the two final equations, procedure outlined by Cohen and Cohen (1983, p.111)[21] was followed to investigate the difference in the estimated coefficients for the variable between the two populations associated with Group BM_{jv} and Group CM_{jv} (the calculation of the statistics was straightforward, hence details are omitted here). It was found that for this variable the estimated coefficients were significantly different (at the level of .05) between British and Chinese. Therefore it can be said that, based on the unstandardised coefficients, it is more important for the Chinese manager to show "integrity" to gain the British manger's trust than it is for the British manager to show "integrity" to gain the Chinese manager's trust in comparative terms.

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[21] The test for the null hypothesis that two independent regression coefficients b_{i*} (i.e., coming from two different samples, e.g., sample 1 and sample 2) are equal is carried out by utilising their respective standard errors which are substituted in:

$$z = \frac{b_{i1} - b_{i2}}{\sqrt{SE_{b_{i1}}^2 + SE_{b_{i2}}^2}}$$

where z is referred to the normal distribution table (Cohen and Cohen, 1983, p.111).

The regression analysis identified significant factors leading to trust from the perspectives of British and Chinese managers in SBJVs. The results revealed that not all the seven hypothesised factors had a significant effect on trust, and the factors varied partly with the two populations associated with Group BM_{jv} and Group CM_{jv}. This finding is consistent with the view in the literature that individuals from different cultures have identifiable (and maybe different) behavioural styles reflected in the relational features of trust, and these characteristics of the trustee will lead that person to be more or less trusted (Mayer, Davis and Schoorman, 1995).

Mean differences

While the findings from the present analyses are valid for substantive inference and interpretation, it is worth noting that the relatively small sizes of the samples in the present analyses may lead to the regression results being more conservative than otherwise (see footnote 19 on page 191). Furthermore, the constraint of sample size precluded the regression analysis to estimate moderator effects which may result from some of the factors. Therefore it is reasonable to caution that other factors not included in the final regression equation should not be overlooked given the general view on the importance of the seven factors of the conditions of inter-personal trust in the literature (e.g., Butler, 1991; Mayer, Davis and Schoorman, 1995).

It is suggested that attention should be paid but not restricted to the factors identified in the present study from both practical and theoretical viewpoints. Apart from the causal relations, some knowledge about the average levels of these factors can be informative for future research in related topics and enhance British and Chinese managers' understanding of each other for improving their working relationships and better co-operation in SBJVs. Therefore, the analyses in the present study moved on further to explore differences in the means of the seven factors as well as the overall level of trust between Group BM_{jv} and Group CM_{jv}. For the same reason, comparisons of mean differences in the seven factors were also made between the sub-samples of Group BM and Group BM_{jv}, and between Group CM and Group CM_{jv} in the next sub-sections.

The test of mean differences in the perceived level of the conditions of inter-personal trust and overall trust between the populations associated with Group BM_{jv} and Group CM_{jv} was based on a general hypothesis (H6):

H6 There is no difference between the British and Chinese managers in a SBJV with regard to the level of trust in each other and the degree of the conditions of trust perceived on each other.

The test was carried out with independent *t* test with SPSS. Although the two samples were of unequal size, in independent *t* tests the assumption of homogeneity of variance is more important than the equality of the sample size (Hays, 1994, p.328). SPSS provides Levene's test for equality of variances, and both separate-variance and pooled-variance *t* tests are performed.

Nevertheless, in view of the possibility that the unequal sample sizes may cause the *t* test function differently than intended, the Mann-Whitney U test was also performed for cross-validation in this and the following sub-sections. The Mann-Whitney test is very widely used as the nonparametric counterpart to the two-independent-sample *t* test because it does not assume normality, and is less sensitive to extreme observations and fairly robust for departures from the assumption of identical distributions (Sandy, 1990, p.753). However, "it is far more sensitive to differences in central tendency, so a statistically significant result is almost certain to mean that the populations have different average scores" (Huck and Cormier, 1996, p.562). The test statistics are presented together with the t-test results.

Table 5.20 reports the test statistics for testing H6. Inspection of the statistics of Levene's test for equality of variances in Table 5.20 revealed that the observed significance levels were greater than .01 for all the factors except the factor "consistency" ($\rho < .01$). Apart from this factor, therefore, the assumption of homogeneity of variance was tenable for the two sample groups, given the inequality of the sample sizes. For the factor "consistency" the statistics with unequal variance correction were used for hypothesis test.

Table 5.20 Independent samples test (CTI) between Group BM_{jv} and CM_{jv}

Factors	n		Levene's Test for Equality of Variances		Mean		Std. Deviation		t-test for Equality of Means			Mann-Whitney Test
	Group BM_{jv}	Group CM_{jv}	F	Sig.	Group BM_{jv}	Group CM_{jv}	Group BM_{jv}	Group CM_{jv}	t	df	Sig. (2-tailed)	Sig. (2-tailed)
Availability	47	34	1.838	.179	4.02	3.76	.69	.83	1.517 (1.473)	79 (63.154)	.133 (.146)	.164
Competence*	47	34	.336	.564	3.89	4.37	.86	.83	-2.539 (-2.552)	79 (72.610)	.013 (.013)	.003
Consistency*	47	34	8.805	.004	3.46	4.28	1.09	.62	-3.964 (-4.309)	79 (75.303)	.000 (.000)	.000
Discreetness*	47	34	1.700	.196	3.39	4.42	.98	.67	-5.280 (-5.601)	79 (78.802)	.000 (.000)	.000
Integrity*	47	34	2.881	.094	3.22	4.18	.98	.71	-4.844 (-5.097)	79 (78.999)	.000 (.000)	.000
Openness	47	34	4.528	.036	3.12	3.29	.99	.74	-.880 (-.921)	79 (78.898)	.382 (.360)	.590
Promise fulfilment*	47	34	1.508	.223	3.74	4.37	.89	.64	-3.475 (-3.657)	79 (78.999)	.001 (.000)	.001
Overall trust*	47	34	.831	.365	3.72	4.39	.87	.63	-3.804 (-4.007)	79 (78.999)	.000 (.000)	.001

Note: 1. Scales were inverted as 1= strongly disagree, ... 5= strongly agree.
2. Statistics with equal-variances-not-assumed are provided in brackets.
3. Missing values excluded listwise.

* Mean difference significant at the .05 level.

Significant differences were found at the .05 level between the two samples in the mean scores of overall trust and five antecedents of trust: "competence", "consistency", "discreetness", "integrity" and "promise fulfilment". The nonparametric test indicated consistent results. The hypothesis (H6) of no differences between the two populations associated with the two samples had to be rejected in regard to these six factors.

Inspection of Table 5.20 indicated that the mean scores of the Chinese managers' rating on their British counterparts on the five factors of conditions of trust were higher than the mean scores of the British managers' rating on their Chinese counterparts. In addition, the Chinese managers had a higher level of trust on average in their British counterparts than the British managers did in the Chinese counterparts in SBJVs. The two groups' mean scores on the factors "availability" and "openness" were not significantly different at the .05 level, hence the hypothesis H6 was not rejected with regard to these two factors.

5.2.2.2 Analysis with Group BM and Group BM_{jv}

As mentioned earlier, although only some of the factors of conditions of inter-personal trust measured by the CTI instrument were identified by regression analysis as significant in affecting inter-personal trust in the SBJVs, examination of differences in the magnitude of all the factors from different comparative perspectives can provide valuable information for future research and for British and Chinese managers to improve their understanding of the issue of inter-personal trust in the context of changing situations.

As British managers move from working with British colleagues at home to working with Chinese managers in SBJVs, they are facing new (or possibly unknown) norms of behaviour in inter-personal interaction, new (or possibly hidden) agenda of the Chinese counterpart, and new (or possibly ambiguous) frames of reference in dealing with working relationships with the Chinese counterpart. This sub-section presents a comparative analysis of the perceived behavioural characteristics measured by the

conditions of inter-personal trust demonstrated by the British managers not in SBJVs and the Chinese managers in SBJVs. This was aimed at identifying what potential and different characteristics a British manager may find in a Chinese counterpart in SBJVs as compared with those found in a British colleague working at home.

Test for equality of between-group means

The comparison of the conditions of inter-personal trust between Group BM and Group BM_{jv} was carried out for testing the hypothesis (H7):

H7: There is no difference between the level and the conditions of inter-personal trust as perceived by the British manager on the British colleague in a British organisation, and those as perceived by the British manager on the Chinese counterpart in a SBJV.

The analyses were based on testing differences between the mean scores of the factors measured by the seven-factor CTI scale of the conditions of inter-personal trust. Factor means for the two groups were calculated by summated scales based on the measurement model with cross-cultural equivalence. The independent *t*-test was performed on SPSS with the factor mean scores of Group BM and Group BM_{jv}. Table 5.21 provides the test statistics as well as Levene's test for equality of variances and statistics with unequal variance corrections (nonparametric test statistics are included for cross-validation).

Inspection of the statistics of Levene's test for equality of variances in Table 5.21 revealed that the observed significance levels were greater than .01 for all the factors. Therefore, the assumption of homogeneity of variance was tenable for the two sample groups, given the inequality of the sample sizes.

As Table 5.21 indicates, the observed significance levels were less than .05 for the mean differences of the factors "competence", "discreetness", "integrity" and "openness". Although the t-test for "overall trust" was not significant, the

Table 5.21 Independent samples test (CTI) between Group BM and Group BM_{jv}

Factors	n		Levene's Test for Equality of Variances		Mean		Std. Deviation		t-test for Equality of Means			Mann-Whitney Test
	Group BM	Group BM_{jv}	F	Sig.	Group BM	Group BM_{jv}	Group BM	Group BM_{jv}	t	df	Sig. (2-tailed)	Sig. (2-tailed)
Availability	134	47	4.597	.033	3.82	4.02	.99	.69	-1.280 (-1.515)	179 (115.516)	.202 (.133)	.522
Competence*	134	47	.000	.991	4.21	3.89	.88	.86	2.162 (2.196)	179 (82.855)	.032 (.031)	.004
Consistency	134	47	1.015	.315	3.70	3.46	.99	1.09	1.420 (1.355)	179 (74.268)	.157 (.180)	.110
Discreetness*	134	47	.478	.490	3.86	3.39	.98	.98	2.829 (2.824)	179 (80.266)	.005 (.006)	.006
Integrity*	134	47	.677	.412	3.84	3.22	1.09	.98	3.411 (3.603)	179 (89.415)	.001 (.001)	.000
Openness*	134	47	.000	1.000	3.51	3.12	1.04	.99	2.267 (2.319)	179 (83.957)	.025 (.023)	.020
Promise fulfilment	134	47	.511	.476	3.83	3.74	1.01	.89	.526 (.559)	179 (90.487)	.599 (.578)	.394
Overall trust*	134	47	1.202	.274	3.97	3.72	1.07	.87	1.398 (1.537)	179 (97.309)	.164 (.128)	.024

Note: 1. Scales are inverted as 1= strongly disagree, ... 5= strongly agree.
2. Statistics with separate-variance *t* tests are provided in brackets.
* Mean difference significant at the .05 level.

nonparametric test indicated significant difference for "overall trust" at the .05 level. Therefore the hypothesis H7 was rejected with regard to these four factors as well as "overall trust". This suggests that British managers perceive significantly different levels of the conditions of inter-personal trust measured by these four factors as well as overall trust on Chinese counterparts in SBJVs as compared with their British colleagues in their organisations in the UK.

Inspection of the mean scores revealed that British managers perceived their own colleagues in their own organisations at a higher degree of "competence", "discreetness", "integrity" and "openness" than the Chinese counterparts in SBJVs. One noticeable fact is that generally the mean ratings on each factor in both sample groups were not over the point of 4 except the mean rating on "competence" by Group BM, which was rated at 4.21 by Group BM. The overall level of trust was rated at a moderate level (marginally close to the point of 4) by both groups, with a higher level of trust on their British colleagues at home than on their Chinese counterparts in SBJVs.

The observed significance levels were greater than .05 for the rest of the factors "availability", "consistency" and "promise fulfilment". Hence the hypothesis H7 was not rejected with regard to these factors. It appears, therefore, that British managers would perceive approximately the same levels of conditions of trust measured by "availability", "consistency", "promise fulfilment" on both British colleagues in their own organisations in the UK and the Chinese counterparts in SBJVs in China.

5.2.2.3 Analysis with Group CM and Group CM_{jv}

As Chinese managers move from working with Chinese colleagues in Chinese organisations (in most cases they are state-owned firms) to working with British counterparts in SBJVs, they face similar challenges as the British managers do: new (or possibly unknown) norms of behaviour in inter-personal interaction, new (or possibly hidden) agenda of the British counterpart, and new (or possibly ambiguous) frames of reference in dealing with working relationships with the British counterpart.

With the same approach as the last sub-section, this sub-section presents a comparative analysis of the perceived behavioural characteristics measured by the conditions of inter-personal trust demonstrated by the Chinese managers not in SBJVs and the British managers in SBJVs. This was aimed at identifying what potential and different characteristics a Chinese manager may find in a British counterpart in SBJVs as compared with those found in a Chinese colleague working in a Chinese organisation.

Test for equality of between-group means

The comparison of the conditions of inter-personal trust between Group CM and Group CM_{jv} was carried out for testing the hypothesis (H8):

H8 There is no difference between the level and the conditions of inter-personal trust as perceived by the Chinese manager on the Chinese colleague in a Chinese organisation, and those as perceived by the Chinese manager on the British counterpart in a SBJV.

In the same way as the previous sub-section, the independent *t*-test was performed on SPSS to examine differences in the factor mean scores of Group BM and Group BM_{jv}. Table 5.22 provides the test statistics, and Levene's test for equality of variances and statistics with unequal variance corrections are included since the two samples were of unequal sizes (nonparametric test statistics are included for cross-validation). The statistics of Levene's test for equality of variances in Table 5.22 revealed that the observed significance levels were greater than .01 for all the factors, hence the assumption of homogeneity of variance was tenable for the two sample groups, given the inequality of the sample sizes.

Inspection of Table 5.22 reveals that the observed significance levels were less than .01 for the mean differences of all the factors between the two groups, which are consistent with the nonparametric test results. Therefore the hypothesis H8 was rejected with regard to all the factors of the conditions and the overall level of inter-

Table 5.22 Independent samples test (CTI) between Group CM and Group CM_{jv}

Factors	n		Levene's Test for Equality of Variances		Mean		Std. Deviation		t-test for Equality of Means			Mann-Whitney Test
	Group CM	Group CM_{jv}	F	Sig.	Group CM	Group CM_{jv}	Group CM	Group CM_{jv}	t	df	Sig. (2-tailed)	Sig. (2-tailed)
Availability*	235	34	.439	.508	3.23	3.76	.86	.83	3.410 (3.517	267 (44.025)	.001 (.001)	.001
Competence*	235	34	.007	.931	3.90	4.37	.80	.38	3.221 (3.130)	267 (42.336)	.001 (.003)	.000
Consistency*	235	34	4.200	.041	3.48	4.28	.86	.62	5.225 (6.690)	267 (53.704)	.000 (.000)	.000
Discreetness*	235	34	.470	.493	3.83	4.42	.82	.67	3.989 (4.640)	267 (48.563)	.000 (.000)	.000
Integrity*	235	34	.412	.522	3.51	4.18	.83	.71	4.464 (5.050)	267 (47.356)	.000 (.000)	.000
Openness*	235	34	2.362	.125	2.86	3.29	.93	.24	2.628 (3.119)	267 (49.513)	.009 (.003)	.008
Promise fulfilment*	235	34	.162	.687	3.78	4.37	.76	.64	4.308 (4.857)	267 (47.210)	.000 (.000)	.000
Overall trust*	235	34	.073	.788	3.73	4.39	.82	.63	4.514 (5.487)	267 (50.713)	.000 (.000)	.000

Note: 1. Scales are inverted as 1= strongly disagree, ... 5= strongly agree.
2. Statistics with separate-variance *t* tests are provided in brackets.
3. Missing values excluded list-wise.

* Mean difference significant at the .05 level.

personal trust. This result suggests that Chinese mangers would perceive significantly different levels of the conditions of inter-personal trust on the British counterparts in the SBJVs as compared with the same conditions measured on their Chinese colleagues in their organisations in China.

Inspection of the mean scores between the two sample groups reveals that Chinese managers perceived their own colleagues in their own organisations at a lower degree on each of the factors than the British counterparts in the SBJVs. It is noticeable that the overall level of trust perceived by the Chinese on their British counterparts in the SBJVs was higher than the level perceived on their Chinese colleagues in their own organisations in China.

5.2.2.4 Discussion

It was discussed in the early chapters that in IJV situations that involve uncertainty and complexity of interaction between the inter-dependent actors, trust plays a crucial role in reducing cultural distance, facilitating mutual forbearance and mutual insurance and enhancing healthy working relationships for sustained effective co-ordinated action between IJV partners. Individuals from different cultures have identifiable behavioural styles reflected in the relational features of trust. It is important to identify the differences in these characteristics since they may cause unintentional misunderstandings and affect the maintenance of the working relationships in IJVs.

It has been argued that it is the specific component (i.e., situational trust in specific others) other than global trust in generalised others that tended to be related to organisational performance, and trust is also activated and sustained by a multidimensional set of antecedent conditions (Butler, 1991; Mayer, Davis and Schoorman, 1995). However, these issues were not adequately investigated in the previous studies for reasons such as confusion between trust and its antecedents and outcomes, lack of specificity of trust referents leading to confusion in levels of analysis and a failure to consider both the trusting party and the party to be trusted (Mayer, Davis and Schoorman, 1995).

In the present study it is postulated that it is more important for managers to know what causes trust than to just understand the construct itself (Butler, 1991). It is argued that a clear understanding of not only trust but also its causes can facilitate cohesion and collaboration between people by building trust through means other than inter-personal similarity (Mayer, Davis and Schoorman, 1995). The analysis for this study took the approach consisting of defining and investigating a comprehensive a priori set of conditions (antecedents) of trust in a specific person. The respecified CTI instrument was employed to investigate the conditions leading to trust in a specific target person from the perspectives of dyadic British and Chinese managers associated with the same SBJVs. The CTI instrument measures the trustor's perceived characteristics of the trustee. The characteristics of the trustee represent the trustee's trustworthiness, which were hypothesised to affect the trustor's overall trust in the trustee. These were measured in terms of the seven factors of the respecified CTI model validated in the present study with cross-cultural equivalence.

Significant antecedents of inter-personal trust

The regression analysis provided support for H5 in terms of two factors "availability" and "integrity" from the British manager's perspective, and three factors "competence", "integrity" and "openness" from the Chinese manager's perspective. The regression analysis reveals that the same independent variables are not consistently statistically significant across the two populations associated with Group BM_{jv} and Group CM_{jv}, and different factors of the conditions of inter-personal trust are important in explaining the variation of overall trust between the two populations. A point to note is that the earlier SEM analysis indicated "integrity" and "promise fulfilment" are significant antecedents of inter-personal trust for British and Chinese managers in their home organisations. These findings have provided empirical evidence that reveals the cultural and contextual specificity of behavioural characteristics and their different relations with inter-personal trust on a specific target person in the SBJV context.

It was found that a trustee's "integrity" was the most important factor in explaining a trustor's overall trust in the trustee from both British and Chinese manager's perspectives. In comparative terms, it is more important for the Chinese manager to demonstrate integrity in order to gain trust from the British manager. The measurement items of this factor consisted of two statements: "He/she always tells me the truth" (cti021) and "He/she deals honestly with me" (cti023). Although the two statements do not capture the exhaustive dimensions of the characteristics of integrity, they do collectively measure the core of the construct.

As Mayer, Davis and Schoorman (1995) point out, "the relationship between integrity and trust involves the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable". Here the importance lies in the adherence to and acceptability of the principles (McFall, 1987, ctd. in Mayer, Davis and Schoorman, 1995). The significance of integrity found in the present study suggests that both British and Chinese managers value the principle of telling each other the truth and being honest towards each other, and would trust the partner only when the partner demonstrates that the principle has been adhered to in their working relationships. It further suggests that the principle of integrity as a fundamental norm of behaviour has a pan-cultural property, at least between the British and Chinese managers in SBJVs.

The factor of availability was identified as significant in affecting the overall trust in the Chinese manager from the British manager's perspective, but not so from the Chinese manager's perspective. The factor was measured by two statements: "He/she is usually around when I need him/her" (cti001) and "He/she is available when I need him/her" (cti004). The implications may be looked at in terms of differences in affect-based trust (McAllister, 1995) in different cultures.

McAllister defined two forms of inter-personal trust: cognition-based trust and affect-based trust. Cognition-based trust is grounded in individual beliefs about the trustee's reliability and dependability, and affect-based trust is based on reciprocated inter-personal care and concern. A core measure of affect-based trust is the frequency of interaction between the trustor and the trustee, which provides sufficient social

information to allow the making of confident attributions about the trustee's behaviour (Lewis and Weigert, 1985, ctd. in McAllister, 1995). This measure is similar to the factor of availability in Butler's (1991) CTI instrument used in the present study. McAllister's study based on the American sample provided support for the positive association between the frequency of interaction and a manager's affect-based trust in a peer. Based on the finding of the present study, it appears that affect-based trust factor is important for the British manager to build trust in the Chinese manager, but not so for the Chinese manager to build trust in the British manager.

Mayer, Davis and Schoorman (1995) have incorporated this type of behavioural characteristic into the construct of "benevolence", together with the other two factors "ability" and "integrity" as the antecedents of inter-personal trust. Benevolence reflects that the trustee has some specific attachment to the trustor, in other words, the perception of a trustee's positive orientation toward the trustor (Mayer, Davis and Schoorman, 1995). By employing these related concepts, the significance of the Chinese manager's availability in developing the British manager's trust in the Chinese manager suggests that the British manager is more sensitive to the Chinese manager's positive orientation than the Chinese manager is to the British manager. Consistent with the view that need for trust arises in a risky situation (Mayer, Davis and Schoorman, 1995), it is inferred that since working in a foreign environment can be stressful and fear of failure can be strong, the unfamiliar Chinese culture and the macro environment of China pose certain degree of risk to the British manager, hence causing higher concern on the local partner's positive orientation and sufficient contact for communication, which directly affect trust in the Chinese partner. It can also be believed that the Chinese manager attaches less importance to benevolent characteristics in the British manager's behaviour because working at their own home country the Chinese manager may have much less feeling of risk than the British manager's.

Different from the British manager, the Chinese manager's trust in the British manager is dependent on not only integrity, but also competence and openness that appear in the British manager's behaviour. With respecified CTI instrument, competence was

measured by three item statements including one reversed statement: "He/she does things competently" (cti005), "Unfortunately, he/she does things poorly" (cti006, response scores were reversed in the analysis) and "He/she performs her/his tasks with skill" (cti007). In Mayer, Davis and Schoorman's model competence was encompassed by the construct of ability. Openness was measured by two item statements: "He/she tells me what he/she is thinking" (cti029) and "He/she tells me what's on his/her mind" (cti030). This was integrated into the construct of integrity in Mayer, Davis and Schoorman's model.

The significance of a British manager's competence in affecting a Chinese manager's trust in the British manager indicates that the British manager's professional skill and ability perceived by the Chinese counterpart to handle the intricacies of managing SBJV effectively is critically important for gaining trust from the Chinese counterpart. The implications from this finding need to be discussed in a broad perspective.

First, inspection of the interview notes of the present research revealed that some British managers observed that Chinese managers lacked management skills. Similar complaints can also be found in some received studies of IJVs in China. However, inspection of the notes made in the interviews with the Chinese respondents indicated that they observed that some British managers appeared to have strong skills such as co-ordinating meetings, writing reports or using the computer to handle financial data, but sometimes they were not competent in handling the joint venture complexity because they did not understand of the Chinese culture and the ways things are handled in the Chinese system; and some British managers could not make immediate decisions without consulting their superiors in the UK. This difference in the reciprocal perception of the counterpart's competence or ability suggests that there may be a difference in how one defines the concept of competence or ability. For instance, the centrality of people and the skill in properly handling the inter-personal relationship are key components in the Chinese management philosophy. As one Chinese respondent asserted, "management in China is the management of people and the relationships between people; inter-firm co-operation is in fact inter-person co-operation, and this is the highest level of co-operation". It can therefore be argued

that the constructs of competence and ability have culture-specific contents. A British manager's skill and ability developed in the UK may not prove to be always applicable in a non-Western country like China. A better understanding of what "skill" and "ability" means to the British and Chinese manager in the SBJV may help them to improve their competence that is valued by each other and hence improve mutual trust.

Second, from the perspective of cross-cultural research methodology, the measurement items of competence in the CTI instrument may be too general to capture some culturally diverse elements. This implies that a measurement scale may have the construct equivalence that is limited to some core elements but not adequate enough in the domain as a result from striving for construct equivalence. Such construct under-representation (Embretson, 1983) is a potential problem in cross-cultural research, which typically happens when employing the West research instrument in non-Western countries (van de Vijver and Leung, 1997). It may reflect a limitation in using "imposed etics" based on the measurement scale developed in the West to obtain "derived etics" for use in a non-Western country. In this process the original measurement scale may not have adequate "sampling domain" (in van de Vijver and Leung's term) to capture most, if not exhaustive, elements of the construct in different cultures. On the other hand, the respecification of measurement scales from a heuristic approach for achieving cross-cultural invariance of the construct may result in loosing some items hence reduce the domain of construct representation. These issues needs further analysis and empirical tests in the future research.

The importance of the British manager's openness in gaining the Chinese manager's trust suggests that British managers need to maintain effective inter-personal communication at all times. It may be particularly because the Chinese see the British as a typical example of reserved personality. As an observation, in the interviews with the Chinese respondents, most of them frequently commented "... as you know, the Englishmen are very reserved ...". This tendency may also be reflected in the British manager's management styles. Therefore it is important for the British managers to "unlearn" this negative cultural character and develop more informal styles in the

inter-personal communication with the Chinese counterpart. It is argued that a certain extent of inter-personal friendship or social relationship may help the British manager to establish genuine and "heart to heart" communication, which will enhance trust from the Chinese manager. In addition, frequent communication to inform the counterpart of what is happening in the JV and in each other's parent firm can be an important symbol of openness.

It may be suggested that due to the British manager's individualistic style and the Chinese manager's collectivist style, mismatch in approaches may exist and may result in unintentional confrontation. For instance, the Chinese manager may expect the British manager to inform him of the necessary information before decisions are made, while the British manager may regard the decision making as his sole responsibility as a chief executive and only inform the Chinese manager of the result of the decision. Openness in the inter-partner communication may facilitate the effectiveness of communication and reduce unintentional misunderstanding and mistrust.

Mean differences in the antecedents of inter-personal trust and overall trust

Finally some comments should be made on the findings from comparative analysis of the mean differences in the conditions of trust and overall trust between the three pairs of sub-samples: Group BM_{jv} and Group CM_{jv}, Group BM and Group BM_{jv} and Group CM and Group CM_{jv}.

Group BM_{jv} and Group CM_{jv}. First, in testing equality of means between the two populations associated with Group BM_{jv} and Group CM_{jv}, the independent *t* test revealed a significant difference in the level of overall trust between the British and Chinese managers in SBJVs. It appears that the Chinese managers on average trust the British manager more than the British managers trust the Chinese manager. This finding is informative in that a general difference in trust between the British and Chinese in SBJVs has been uncovered. However, its theoretical implications cannot be further generalised at this point of time without further data. One important piece of information that is needed is the characteristics of the trustor, i.e., the trustor's

general willingness to trust others, or "propensity to trust" in Mayer, Davis and Schoorman's (1995) term. It is posited that propensity to trust will influence how much trust one has for a trustee prior to information about that particular person being available, and people differ in their inherent propensity to trust (Mayer, Davis and Schoorman, 1995). As the regression analysis revealed, the three significant factors (integrity, openness and competence) explain about 64% variance in the Chinese manager's trust in the British manager. It can be inferred, therefore, that some other factors not measured by the CTI instrument in the present study (including propensity to trust) may have caused certain amount of influence on the overall level of trust. However, the propensity and other unknown factors were not investigated in the present study due to resource and time limit. Further investigation is needed in the future research to identify those factors in the trustor's characteristics and their associations with the trustee's characteristics as well as the overall level of trust.

Second, the results from the independent *t* test suggest that except "availability" and "openness", the behavioural characteristics on the five factors of conditions of trust were perceived differently between the British and Chinese managers. On average the Chinese manager rated the British manager higher than the British manager rated the Chinese manager on competence, consistency, discreetness, integrity and promise fulfilment. These results suggest that in general the British manager receive favourable perceptions, while the Chinese manager receive somewhat less favourable, although not negative, perceptions on the dimensions of the antecedents of inter-personal trust. This seems consistent with the higher level of Chinese manager's overall trust in the British manager. Given other unknown influences as discussed above, the finding implies that the British managers generally should be aware of these advantages and make the best use of them to build and maintain a higher level of trust from the Chinese counterpart. On the other hand, the Chinese manager should be aware of their relatively disadvantageous position and make efforts to improve their behavioural characteristics in order to improve trust from the British counterpart.

Group BM and Group BM$_{jv}$. The independent *t* test for equality of means in the conditions of trust between the populations associate with Group BM and Group

BM_{jv} found significant differences in "competence", "discreetness", "integrity" and "openness". This finding implies that in terms of these four factors, a British manager may find these behavioural characteristics differ between a British colleague in the UK and a Chinese counterpart in a SBJV. The mean differences in these four factors indicated that on average the British manager perceived a higher degree of "competence", "discreetness", "integrity" and "openness" in their own colleagues at home than in the Chinese counterpart in SBJVs. It may be inferred that these differences in the working partner's behavioural characteristics may make a British manager feel less comfortable at the beginning of working with a Chinese manager in a SBJV.

Inspection of the overall level of trust indicated significant between-group difference (based on nonparametric test result). It appears that on average the British manager trust the Chinese manager in SBJVs to a less degree than they trust their own colleagues at home. Since not all the factors were identified as significant in affecting trust in the present study, the discussion has to be constrained to the differences in magnitude in these factors.

Finally, the *t*-test did not find significant difference in the means of "availability", "consistency" and "promise fulfilment". This suggests that as the British manager perceives it, their British colleague at home and the Chinese manager in the SBJV are not significantly different in their behavioural characteristics as described by these three factors. As discussed earlier, there may be other factors not included in the present study that also affect overall trust. Further research is needed to investigate those factors and their impact on trust. At this point it is suggested that the British and Chinese manager need to be aware of these differences and similarities in these antecedents of trust since they may be related to trust but also may be associated with other dimensions of the working relationship in SBJVs.

Group CM and Group CM_{jv}. The independent *t* test for equality of means in the antecedents of inter-personal trust revealed significant differences in all these factors between the two populations associated with Group CM and Group CM_{jv}. This

finding suggests that to the Chinese manager, the behavioural characteristics as described by the seven CTI factors appear significantly different between their Chinese colleagues in Chinese organisations and British counterparts in the SBJVs. In addition, the Chinese manager had significantly different level of trust in their Chinese colleagues and British counterparts in SBJVs. It is interesting to notice that on average the mean scores of the Chinese manager's rating on the British counterpart were significantly higher than the mean scores rated on the Chinese colleague in the Chinese organisation. This fact has not been known before and suggest that not only a Chinese manager may trust a British counterpart in a SBJV more than trusting a Chinese colleague at a home organisation, but also a Chinese manager may feel more comfortable working with a British partner than with a Chinese colleague in a Chinese organisation because a British manager may show more positive behavioural characteristics as described by the seven factors of inter-personal trust. Inspection of interview notes revealed that some Chinese managers indicated that, except for some conflict and misunderstanding that happened sometimes, they generally felt less inter-personal complexity working with their British partner in SBJVs than with their Chinese colleagues in the Chinese parent firms. Some Chinese interviewees indicated a clear recognition of "honesty" in the British manager's personality. While caution should be taken in generalising these observations, it does appear that the general image of the British manager is positive as perceived by the Chinese manager. These results suggest that the British manager should be optimistic about the potential advantages in building inter-personal trust from the Chinese counterpart in the SBJV.

5.2.2.5 Summary

In this section the hypotheses H5, H6, H7 and H8 were tested by regression analysis and comparative analyses on the issue of inter-personal trust involving British and Chinese managers. The regression analysis identified significant factors that affect the overall level of trust from the perspectives of British and Chinese mangers in SBJVs. It was found that not all the factors encompassed in the CTI model were significant, and only one factor "integrity" appeared significant for both British and Chinese managers. The independent *t* tests on the mean differences with the data from

different pairs of sample groups resulted in rejection of the hypotheses of no between-group differences on some factors and non-rejection on some other factors. To give an overview, the decisions on the tests of these hypotheses corresponding to the appropriate factors are summarised in Table 5.23. The test results of the hypotheses H5, H6, H7 and H8 are summarised in Table 5.24 in reference to the differences in perceived conditions of inter-personal trust between the sample groups.

Table 5.23 Summary of hypotheses testing of H5, H6, H7 and H8 (CTI) (at the .05 level)

	Hypotheses	Non-rejection	Rejection
H5	There exists a set of factors as measured by the CTI instrument that have impacts on the level of inter-personal trust for both British and Chinese managers in SBJVs.	British perspective: "Availability" "Integrity" Chinese perspective: "Competence" "Integrity" "Openness"	British perspective: "Competence" "Consistency" "Discreetness" "Openness" "Promise fulfilment" Chinese perspective: "Availability" "Consistency" "Discreetness" "Promise fulfilment"
H6	There is no difference between the British and Chinese managers in a SBJV with regard to the level of trust in each other and the degree of the conditions of trust perceived on each other.	"Availability" "Openness"	"Competence" "Consistency" "Discreetness" "Integrity" "Promise fulfilment" "Overall trust"
H7	There is no difference between the level and the conditions of inter-personal trust as perceived by the British manager on the British colleague in a British organisation, and those as perceived by the British manager on the Chinese counterpart in a SBJV.	"Availability" "Consistency" "Promise fulfilment" "Overall trust"	"Competence" "Discreetness" "Integrity" "Openness"
H8	There is no difference between the level and the conditions of inter-personal trust as perceived by the Chinese manager on the Chinese colleague in a Chinese organisation, and those as perceived by the Chinese manager on the British counterpart in a SBJV.		"Availability" "Competence" "Consistency" "Discreetness" "Integrity" "Openness" "Promise fulfilment" "Overall trust"

Table 5.24 Summary of the between-group differences of the conditions of inter-personal trust based on the testing of H6, H7 and H8

Factors	Perceptions on the counterparts measured by the factors of the conditions of inter-personal trust between the sample groups compared		
	Group BM_{jv} & Group CM_{jv}	Group BM & Group BM_{jv}	Group CM & Group CM_{jv}
Availability	Similar, moderate	Similar, moderate	Different, $CM<CM_{jv}$
Competence	Different, $BM_{jv}<CM_{jv}$	Different, $BM>BM_{jv}$	Different, $CM<CM_{jv}$
Consistency	Different, $BM_{jv}<CM_{jv}$	Similar, moderate	Different, $CM<CM_{jv}$
Discreetness	Different, $BM_{jv}<CM_{jv}$	Different, $BM>BM_{jv}$	Different, $CM<CM_{jv}$
Integrity	Different, $BM_{jv}<CM_{jv}$	Different, $BM>BM_{jv}$	Different, $CM<CM_{jv}$
Openness	Similar, modest	Different, $BM>BM_{jv}$	Different, $CM<CM_{jv}$
Promise fulfilment	Different, $BM_{jv}<CM_{jv}$	Similar, moderate	Different, $CM<CM_{jv}$
Overall trust	Different, $BM_{jv}<CM_{jv}$	Similar, moderate	Different, $CM<CM_{jv}$

5.3 Styles of handling inter-personal conflict

With regard to the styles of handling inter-personal conflict, the hypotheses included two parts, i.e., those for testing the cross-cultural equivalence of the ROCI-II measure instrument (Rahim, 1983, 1985) towards generating measures with "derived etics", and those for comparative analyses of the styles of handling inter-personal conflict between British and Chinese in Sino-British collaborative organisations.

The hypotheses for testing measure equivalence state as follows:

H9 In a British organisation the use of styles of handling inter-personal conflict can be measured by the five factors as measured by the ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising.

H10 In a Chinese organisation the use of styles of handling inter-personal conflict can be measured by the five factors as measured by the ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising.

H11 There exist an equal number of factors as measured by the ROCI-II instrument with construct equivalence across British and Chinese managers in measuring the styles of handling inter-personal conflict.

Assuming that the measurement model of ROCI-II generated from the American culture would not perfectly fit with the British and Chinese cultures, hypotheses H9 and H10 were proposed for testing the applicability of the American-culture-oriented CTI instrument to either British or Chinese cultures. Hypothesis H11 was proposed for generating from within the ROCI-II instrument a set of measures that were applicable in both British and Chinese cultures. Given the hypotheses H9 and H10 being *either* rejected *or* not rejected, but if H11 was not rejected, it would lead to the derivation of a sub-set of the scales that match with the original ROCI-II with cross-cultural equivalence across the British and Chinese. Assuming H11 was supported, a series of hypotheses were proposed for testing with regard to the styles of handling

inter-personal conflict between the British and Chinese managers in the Sino-British collaborative organisations. These hypotheses state as follows:

H12 With regard to the styles of handling inter-personal conflict, there is no difference between British managers in British organisations in the UK and Chinese managers in Chinese organisations in China.

H13 With regard to the styles of handling inter-personal conflict, there is no difference between British and Chinese managers in SBJVs.

H14 With regard to the styles of handling inter-personal conflict, there is no difference between British managers who are working with British colleagues in British organisations in the UK and those who are working with Chinese counterparts in SBJVs.

H15 With regard to the styles of handling inter-personal conflict, there is no difference between Chinese managers who are working with Chinese colleagues in Chinese organisations in China and those who are working with British counterparts in SBJVs.

In the following sections, the measure instrument of ROCI-II was preliminarily assessed by Cronbach's alpha and EFA. Then with the measures verified by EFA, hypotheses H9, H10 and H11 were tested by CFA towards a measurement model with cross-cultural equivalence (i.e., "derived etics") with British and Chinese cultures. This cross-culturally equivalent measure model was used as a tentative measure instrument for testing the hypotheses H12, H13 and H14. The tests were accomplished with the "static-group comparison design" by independent *t*-test based on data from Group BM, Group BM_{jv}, Group CM and Group CM_{jv}.

5.3.1 Measurement instrument (ROCI-II) validation

The Rahim Organisational Conflict Inventory - II (ROCI-II) measures five styles of handling inter-personal conflict: integrating, obliging, dominating, avoiding and compromising, which are measured by seven, six, five, six and four items respectively in the original instrument. The item statements are presented in Table 5.25. In the same manner as the analysis of CTI in the previous sections, the ROCI-II measurement scales were evaluated by a preliminary examination of the reliability based on Cronbach's alpha, and the EFA and CFA for testing cross-cultural validity and equivalence.

5.3.1.1 Preliminary reliability assessment

Preliminary reliability analysis was conducted based on Cronbach's alpha with the complete original ROCI-II scales. The results are presented in Table 5.26. For Group BM the overall measures exhibited good reliability, with alpha values ranging from 0.63 to 0.85. For Group CM alpha values exhibited moderate reliability, ranging from .52 to .74.

The alpha values for Group BM_{jv} exhibited moderate extent of reliability (alpha values ranged from .54 to .72) except the dimension of "avoiding" that had an alpha value of 0.30, which could be improved to 0.41 if the item 027 was removed. The reliabilities for Group CM_{jv} were over .70 for "Dominating" and "Compromising" and marginally close to .70 for "integrating". But the alpha values were only marginally close to .50 for "obliging" and "avoiding".

Overall, it appeared that the reliabilities of some scales need to be improved by refining the structure of the items for each factor. This was accomplished in connection with the EFA and CFA described in the following sections.

Table 5.25 Measurement scales of ROCI-II

Factors	Variables	Item statements
Integrating	roci001	I try to investigate an issue with my counterpart to find a solution acceptable to us.
	roci004	I try to integrate my ideas with those of my counterpart to come up with a decision jointly.
	roci005	I try to work with my counterpart to find solution to a problem which satisfy our expectations.
	roci012	I exchange accurate information with my counterpart to solve a problem together.
	roci022	I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way.
	roci023	I collaborate with my counterpart to come up with decisions acceptable to us.
	roci028	I try to work with my counterpart for a proper understanding of a problem.
Obliging	roci002	I generally try to satisfy the needs of my counterpart.
	roci010	I usually accommodate the wishes of my counterpart.
	roci011	I give in to the wishes of my counterpart.
	roci013	I usually allow concessions to my counterpart.
	roci019	I often go along with the suggestions of my counterpart.
	roci024	I try to satisfy the expectations of my counterpart.
Dominating	roci008	I use my influence to get my ideas accepted.
	roci009	I use my authority to make a decision in my favour.
	roci018	I use my expertise to make a decision in my favour.
	roci021	I am generally firm in pursuing my side of the issue.
	roci025	I sometimes use my power to win a competitive situation.
Avoiding	roci003	I attempt to avoid being "put on the spot" and try to keep my conflict with my counterpart to myself.
	roci006	I usually avoid open discussion of my differences with my counterpart.
	roci016	I try to stay away from disagreement with mycounterpart.
	roci017	I avoid an encounter with my counterpart.
	roci026	I try to keep my disagreement with my counterpart to myself in order to avoid hard feelings.
	roci027	I try to avoid unpleasant exchanges with my counterpart.
Compromis-ing	roci007	I try to find a middle course to resolve an impasse.
	roci014	I usually propose a middle ground for breaking deadlocks.
	roci015	I negotiate with my counterpart so that a compromise can be reached.
	roci020	I use "give and take" so that a compromise can be made.

Table 5.26 Preliminary reliability analysis for ROCI-II measurement scale

Factors	Items	Group BM n=133		Group CM n=232		Group BMjv n=44		Group CMjv n=32	
		α_1	α_2 (Deleted items)	α_1	α_2 (Deleted items)	α_1	α_2 (Deleted items)	α_1	α_2 (Deleted items)
Integrating	ROCI001 ROCI004 ROCI005 ROCI012 ROCI022 ROCI023 ROCI028	.85		.56	.67 (ROCI012 ROCI022) .68 (ROCI004 ROCI012 ROCI022)	.54	.59 (ROCI028)	.68	.74 (ROCI023 .76 (ROCI023 ROCI028)
Obliging	ROCI002 ROCI010 ROCI011 ROCI013 ROCI019 ROCI024	.67		.69		.72	.75 (ROCI024)	.45	.75 (ROCI024)
Dominating	ROCI008 ROCI009 ROCI018 ROCI021 ROCI025	.71		.63	.65 (ROCI021)	.65		.72	.75 (ROCI025)
Avoiding	ROCI003 ROCI006 ROCI016 ROCI017 ROCI026 ROCI027	.78		.74		.30	.41 (ROCI027)	.47	.65 (ROCI027)
Compromis-ing	ROCI007 ROCI014 ROCI015 ROCI020	.63		.52		.71	.76 (ROCI020)	.81	

Note: α_1 is the preliminary coefficient, α_2 is the coefficient if some items are deleted.

5.3.1.2 Factor pattern similarity: exploratory factor analyses of ROCI-II

The complete twenty-eight items were first assessed by exploratory factor analysis (EFA) with principle component analysis and five-factor criteria for factor extraction by varimax (SPSS) rotation. By this process of "forcing" the items to load on five factors, the resulting factor pattern did not match the original instrument, except that items for the factor "dominating" matched the original scales for both Group BM and Group CM, and items for the factor "avoiding" matched the original scale for Group BM only. The factor loading patterns are shown in Table 5.27.

Table 5.27 Initial EFA factor loadings of ROCI-II

	Integrating		Obliging		Dominating		Avoiding		Compromising	
Items	BM	CM	BM	CM	BM	CM	BM	CM	BM	CM
roci001	.57	.61								
roci002			.59	.46						
roci003				.54				.55		
roci004	.67									
roci005		.73								
roci006								.66	.47	
roci007									.67	.73
roci008					.59	.68				
roci009					.80	.67				
roci010			.65	.51						
roci011			.64	.51						
roci012	.68									
roci013			.59	.62						
roci014									.57	.62
roci015	.57									.63
roci016				.63				.59		
roci017				.68				.61		
roci018					.58	.56				
roci019		.45	.64	.45						
roci020										.67
roci021					.55	.45				
roci022	.69									
roci023	.66	.60								
roci024				.62						
roci025					.71	.65				
roci026				.62				.69		
roci027				.48				.76		
roci028	.81	.70								

Note: 1. BM = Group BM; CM = Group CM.
2. Loadings with absolute values less than .45 were suppressed.
2. Shaded cells indicate missed loading or mis-loading.
3. Squared frames indicate the item-factor pattern matches with the original instrument.

In order to find out whether some of the measurement items would converge to match the five-factor patterns for both groups, further EFA estimations were conducted. Since most of the factors were measured by more than four or five items in the original scales, the proceeding EFA process adopted an exploratory orientation by using eigenvalue-greater-than-one criterion without specifying the number of factors to be extracted. With this method, the first round of estimation resulted in mismatched eight factors for both groups, with a majority of items falling into the five-factor categories.

Through inspection of the factoring results and eliminating conflicting items by degrees, a final solution was achieved after ten rounds of factoring. In the final factoring solution, five factors emerged with item patterns matching with the original scales for both groups. Although there were less numbers of measure items for each factor than the original scale, they still had multi-item measures that range from two to four items. The EFA final solution of the factor pattern and the factor loadings are presented in Table 5.28.

As Table 5.28 shows, for both groups the eigenvalues were greater than one with each factor, and over 55% variances were explained by the extracted five factors. By visual inspection of the factor loadings in Table 5.28, a markedly similar factor pattern was identified for both groups (indicated by the core items). Furthermore, a pairwise comparison of the factor loading patterns was implemented by calculating congruence coefficients, which are provided in Table 5.29 with re-estimated alpha values included.

The results of the congruence coefficients indicate high congruity for all the five factors across the two groups. Given the moderate level of alpha values, the modified ROCI-II was regarded as generally acceptable by the criteria of EFA factor loadings and factor congruity across the two groups.

Table 5.28 A summary of the EFA final solution of items identified as core indicators of ROCI-II for British and Chinese samples

Factors	Original Items	British (n=133)				Chinese (n=224)			
		Core items	Load-ings	Commu-nality	Eigen-value	Core items	Load-ings	Commu-nality	Eigen-value
Integrating	roci001	roci001	.56	.44		roci001	.70	.55	
	roci004	roci004	.77	.63		roci004	.54	.48	
	roci005	roci005	.79	.68	3.18	roci005	.79	.64	3.55
	roci012								
	roci022								
	roci023								
	roci028	roci028	.82	.70		roci028	.70	.64	
Obliging	roci002	roci002	.66	.53		roci002	.57	.50	
	roci010	roci010	.69	.53		roci010	.61	.50	
	roci011	roci011	.58	.54	1.88	roci011	.63	.55	1.65
	roci013	roci013	.60	.46		roci013	.70	.57	
	roci019								
	roci024								
Dominating	roci008	roci008	.65	.54		roci008	.72	.57	
	roci009	roci009	.83	.73		roci009	.74	.66	
	roci018	roci018	.61	.52	2.65	roci018	.48	.47	2.32
	roci021								
	roci025	roci025	.76	.63		roci025	.74	.59	
Avoiding	*roci003*								
	roci006								
	roci016	roci016	.76	.73		roci016	.80	.72	
	roci017	roci017	.73	.63	1.35	roci017	.73	.63	1.19
	roci026								
	roci027	roci027	.71	.54		roci027	.54	.41	
Compromis-ing	roci007	roci007	.85	.74		roci007	.74	.61	
	roci014	roci014	.73	.68	1.24	roci014	.71	.61	1.06
	roci015								
	roci020								

Note: 1. Values shown in the table are conservative values without rounding up.
2. British sample: Measure of sampling adequacy .68973; Bartlett test of sphericity 578.40411, significance .0000; cumulative percent of variance explained 60.7%.
3. Chinese sample: Measure of sampling adequacy .73289; Bartlett test of sphericity 818.74391, significance .0000; cumulative percent of variance explained 57.6%.

Table 5.29 Congruence coefficients for factor comparison (ROCI-II) between Group BM and Group CM

Factors	British (n=133)			Chinese (n=224)			Congruence coefficients
	Core items	Loadings	Cronbach alphas	Core items	Loadings	Cronbach alphas	
Integrating	roci001	.56		roci001	.70		
	roci004	.77		roci004	.54		
	roci005	.79	.77	roci005	.79	.64	.98
	roci028	.82		roci028	.70		
Obliging	roci002	.66		roci002	.57		
	roci010	.69		roci010	.61		
	roci011	.58	.59	roci011	.63	.63	.99
	roci013	.60		roci013	.70		
Dominating	roci008	.65		roci008	.72		
	roci009	.83		roci009	.74		
	roci018	.61	.70	roci018	.48	.66	.99
	roci025	.76		roci025	.74		
Avoiding	roci016	.76		roci016	.80		
	roci017	.73	.69	roci017	.73	.64	.99
	roci027	.71		roci027	.54		
Compromising	roci007	.85	.57	roci007	.74	.56	.99
	roci014	.73		roci014	.71		

Note: In this table only those items retained as core indicators from EFA are presented. All values are conservative values without rounding up.

5.3.1.3 Factorial invariance: confirmatory factor analysis of ROCI-II

This section reports the testing of the hypotheses H9, H10 and H11 (based on the measures resulting from the EFA) by the CFA[22]. An initial estimate of the modified ROCI-II measurement model appeared unstable by assessing the overall five-factor multi-dimensional model with CFA. This was not surprising given the moderate re-estimated values of reliability and the unequal sample sizes in particular. In order to circumvent such difficulties, a different approach was employed. This was a sequential hypothesis testing procedure suggested by Jöreskog (1971, 1993) and Alwin and Jackson (1981), and was used by researchers in the literature in assessing cross-cultural comparability with samples of unequal sizes (e.g., Windle, Iwawaki and Lerner, 1988). With this approach, measurement equivalence was investigated at the sub-scale level across British and Chinese sample groups by separate, single-factor (unidimensional) measurement models for the five constructs of ROCI-II. The investigation followed from the same procedure as the nested goodness-of-fit test with LISREL simultaneous multi-group methods reported in the literature (e.g., Windle, Iwawaki and Lerner, 1988). The test results are presented in Table 5.30.

The first and second steps involved testing the hypotheses H9 and H10 by the separate specification and testing of single-factor (within-group) models for Group BM and Group CM. The within-group models are presented as basic models next to "1" and "2" respectively, which represent single-factor model specifications for the inter-times covariance matrix of each of the five dimensions of styles of handling inter-personal conflicts for each of the two cultural groups. The inclusion of a null model was for the calculation of additional practical indices of goodness-of-fit (i.e., TLI and BBI).

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[22] The model specification is, in principle, similar with those in the previous sections. To avoid repeating the similar details of the model specification, in this section the presentation of the LISREL analyses is simplified by presenting the summary of goodness-of-fit indices only, following from published studies in the literature (e.g., Windle, Iwawaki and Lerner, 1988).

Table 5.30 Goodness of fit for within- and between-group unidimensional factor models of the modified ROCI-II

Construct	χ^2	*df*	*p*	GFI	AGFI	RMSR	χ^2/df	TLI	BBI
Integrating									
1.Group BM (n=134)									
Null model	147.80	6					24.63		
Basic mode	2.02	2	>.10	.992	.962	.023	1.01	1	.99
2.Group CM (n=233)									
Null model	135.83	6					22.64		
Basic model	1.05	2	>.10	.998	.989	.014	.52	1	.99
3. Sum	3.07	4	>.10				.77	.1	.99
4. Simultaneous	10.61	8	>.10				1.33	.94	.96
5. Difference	7.54	4	>.10						
Obliging									
1.Group BM (n=133)									
Null model	48.85	6					8.14		
Basic mode	1.51	2	>.10	.994	.972	.024	.76	1	.97
2.Group CM (n=232)									
Null model	114.06	6					19.01		
Basic model	7.84	2	>.01	.984	.921	.040	3.92	.83	.93
3. Sum	9.39	4	>.05				2.35	.89	.88
4. Simultaneous	14.88	8	>.05				1.86	.94	.82
5. Difference	5.49	4	>.05						
Dominating									
1.Group BM (n=134)									
Null model	101.30	6					16.88		
Basic mode	1.65	2	>.10	.994	.970	.023	.83	1	.98
2.Group CM (n=232)									
Null model	141.43	6					23.57		
Basic model	10.85	2	<.05	.979	.893	.046	5.425	.80	.92
3. Sum	12.74	4	<.05				3.185	.89	.90
4. Simultaneous	13.54	8	>.05				1.69	.96	.89
5. Difference	.80	4	>.10						
Avoiding*									
1.Group BM (n=134)									
Null model	138.52	6					23.09		
Basic mode	6.15	2	=.046	.979	.896	.036	3.08	.91	.96
2.Group CM (n=232)									
Null model	145.75	6					24.29		
Basic model	2.91	2	>.10	.994	.970	.025	1.46	.98	.98
3. Sum	9.07	4	>.50				2.27	.94	.97
4. Simultaneous	14.67	8	>.05				1.83	.96	.95
5. Difference	5.60	4	>.10						
Compromising**									
1.Group BM (n=134)									
Null model	68.94	6					11.49		
Basic mode	.26	2	>.10	.999	.995	.011	.13	1	1
2.Group CM (n=232)									
Null model	68.47	6					11.41		
Basic model	5.85	2	>.05	.987	.936	.045	2.95	.81	.91
3. Sum	6.19	4	>.10				1.55	.95	.91
4. Simultaneous	17.43	8	>.01				2.18	.89	.75
5. Difference	11.24	4	>.01						

* Item roci006 was included with roci016, roci017 and roci027 in the analysis.
** Item roci015 and roci020 were included with roci007 and roci014 in the analysis.

In steps 3-5 the hypothesis H11 was tested. The "sum" model next to "3" represents the simultaneous model without constraints imposed on factor loadings across groups (for this model the chi-square and degree of freedom equal the sum of the chi-squares and degrees of freedom of the basic models for each group, hence the title "sum").

Next to "4" is the simultaneous model which constrained factor loadings to equivalence across cultural groups. Then a comparison was made for each factor model between the fit of the simultaneous model which constrained factor loadings and the fit of the "sum" model without constraints, the statistical results (differences in chi-square, degree of freedom and the probability level ρ) being represented as "difference" next to "5".

A point should be noted here with regard to the two factors "avoiding" and "compromising". Since the EFA resulted in three measures for "avoiding" and two for "compromising", to use a single-factor model for each of the two factors would fall into a situation in which the non-redundant elements in the sample covariance matrix would not be sufficient to yield an over-identified model for which a goodness-of-fit index can be computed (Bagozzi, 1994, p.326). Without over-identified parameters it is meaningless to assess model plausibility by evaluating fit (MacCallum, 1995, p28). To overcome this limitation, a measure item excluded from EFA was brought back to the measure of "avoiding", and two items to the measures of "compromising". By resuming roci006 (previously excluded based on EFA) back into the measures of "avoiding", the number of measures met the minimum requirement of four. The factor "compromising" originally had only four items, hence items roci015 and roci020 excluded by EFA were added back to the measures of roci007 and roci014. This remedy effected the estimation of the measurement models for each of the factors with trivial influences on the results. The results of the model estimation are provided in Table 5.30.

The separate specification and testing of single-factor (within-group) models (i.e., the basic models in Table 5.30) revealed that the goodness of fit index (GFI) yielded values in excess of .90 for all the basic models; the root mean square residual (RMSR)

was uniformly small (lower than .50); the normed fit index (BBI) was above .90 in all instances, while the TLI was lower than .90 for Group CM in "obliging", "dominating" and "compromising". These results give support to non-rejection of the hypotheses H9 and H10. This suggests that for both Group BM and Group CM, there is clearly a dominant factor corresponding to each of the five dimensions of the styles of handling inter-personal conflict. The models for each factor were used as the baseline models for testing factorial invariance across the two groups (i.e., H11).

To test for the hypothesis H11, comparisons were made between the chi-square statistics of each of the simultaneous models (between-group), in which the factor loadings were constrained to equivalence across the two groups and the non-constrained simultaneous models (the "sum" model). The test results are summarised in Table 5.30. It appeared that the differences were not statistically significant for the first four factors except for the last factor "compromising", in which case the ρ value was marginally less than .05. Given that no substantial differences were found in the changes of chi-squares between the constrained (factor loading invariant) and non-constrained models for the five factors, support was provided for non-rejection of the null hypothesis (H11) of the invariance of factor loadings across the two cultural groups. Hence "derived etic" measure equivalence was established for the two cultural groups. In other words, the measures (based on the modified items from EFA) corresponding to each of the five dimensions of the styles of handling inter-personal conflict can be regarded as measuring the same construct with adequate equivalence for the Group BM and Group CM.

In addition to the testing of cross-cultural equivalence of the measures, assessment was also made on the properties of the parameters of the measurement models i.e., the reliability and validity of the measurement.

Assessment of the reliabilities of the measures was carried out on individual measure items and the factors. The multiple correlation coefficients (R^2) (see Table 5.31) appeared lower than the recommended acceptable level (.50) for most of the individual items for both groups.

In examining the R^2 values in LISREL output, however, a few issues should be considered jointly. First, since the measure items were individual test items for each factors (this has been termed the most disaggregative approach in the literature, see Bagozzi and Foxall, 1996, p.204), the test was very sensitive to measurement error, which would often result in low R^2s (Bagozzi and Foxall, 1996, p.204)[23]. Another important issue is whether the indicators are conceptually defined to go together on the factors. Previous research (Rahim and Magner, 1995) and the EFA of the measurement items in this research (as described in the previous section) have provided support for the factor-item models.

Table 5.31 Standardised factor loadings (λ), t ratios, R^2s, composite reliability (ρ_c) and variance extracted (ρ_{ave}) for the final CTI baseline model

	Group BM (n=132)					Group CM (n=226)				
Items	**λ**	**t-ratio**	**R^2**	**ρ_c**	**ρ_{ave}**	**λ**	**t-ratio**	**R^2**	**ρ_c**	**ρ_{ave}**
Integrating										
roci001	.479	5.283	.229	.780	.478	.566	7.579	.320	.680	.353
roci004	.705	8.335	.497			.491	6.559	.241		
roci005	.796	9.594	.634			.747	9.673	.559		
roci028	.742	8.843	.551			.539	7.229	.291		
Obliging										
roci002	.413	3.752	.170	.597	.274	.579	7.299	.335	.637	.311
roci010	.606	5.234	.367			.382	4.819	.146		
roci011	.564	4.972	.318			.592	7.440	.350		
roci013	.490	4.428	.240			.644	7.954	.414		
Dominating										
roci008	.569	6.135	.324	.717	.398	.506	6.775	.256	.667	.348
roci009	.780	8.351	.609			.727	9.303	.529		
roci018	.438	4.603	.192			.359	4.710	.129		
roci025	.683	7.369	.467			.692	8.946	.479		
Avoiding										
roci006	.613	7.022	.376	.758	.452	.462	6.372	.214	.679	.369
roci016	.782	9.153	.611			.883	10.705	.779		
roci017	.801	9.402	.642			.576	7.771	.332		
roci027	.425	4.613	.180			.389	5.372	.151		
Compromising										
roci007	.459	4.609	.211	.654	.345	.700	6.160	.490	.530	.244
roci014	.877	7.309	.770			.551	5.565	.303		
roci015	.414	4.193	.171			.360	4.225	.130		
roci020	.477	4.768	.228			.235	2.791	.055		

[23] A similar viewpoint was given by Roger E. Millsap of Baruch College, CUNY from a discussion with him on this issue through the SEMNET. The author has benefited from his comments on the issue of low r-square for the discussion here.

As Bagozzi and Baumgartner argue (1994, p.402), despite the fact that small individual item reliabilities may point to inadequate measurement of a construct by a given indicator, it is usually more important that the construct be measured adequately by all indicators of the construct jointly, which can be assessed by the composite reliability. The composite reliability values (ρ_c) of the factors (see Table 5.31) were all above the suggested level of .60 for both groups. In addition, the R^2s were all statistically significant as indicated by the *t* values.

With the above views and given the good fit of the models and the acceptable residuals, it can be argued that although most items appeared to be weak indicators individually as indicated by their low R^2s, the items together still provide acceptable measures for the five factors. It is noticed that the variance extracted values were also lower than the suggested acceptable level. For the present exploratory work, the overall reliability of the measurement factors was considered acceptable. It is suggested, however, that it might be useful to explore the matter further using new data in future research.

The convergent validity of the measurement items was assessed by examining whether each item has a significant factor loading on its posited underlying construct factor. Inspection of Table 5.31 revealed that the *t* values associated with the items were all significant. This supported the convergent validity of the factors measures of the styles of handling inter-personal conflict.

The discriminant validity of the factors cannot be assessed by the approaches based on the CFA since the CFA of the ROCI-II measurement was based on unidimensional factor models, which did not allow production of correlation coefficients among the factors. As an alternative, inspection was carried out on the inter-factor correlations produced by the EFA as shown in Table 5.32. The values of the inter-factor correlations were all very low for both sample groups, ranging from .003 to .190 in absolute values. With such low correlations and significant loading on the appropriate factors as confirmed by the EFA, it was judged appropriate, therefore, to regard the construct factors as showing discriminant validity in the two samples .

Table 5.32 EFA factor correlation matrix of ROCI-II

Factors	Group BM					Group CM				
	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5
1. Integrating	1.00					1.00				
2. Obliging	-.016	1.00				.105	1.00			
3. Dominating	-.160	-.072	1.00			.003	.049	1.00		
4. Avoiding	.053	-.145	-.026	1.00		-.092	-.216	-.192	1.00	
5. Compromising	.089	.131	-.046	-.068	1.00	-.046	-.190	-.159	.155	1.00

5.3.1.4 Discussion

The objective of this section was to evaluate the construct validity of the ROCI-II scales and their factor invariance across the British and Chinese sample groups. The measurement validation of the ROCI-II measure instrument in this section was first carried out through the EFA approach. This resulted in a modified ROCI-II measurement instrument with reduced numbers of measure items for each factor. The original measurement instrument has several numbers of the measure items on each factor, which helped to retain multi-item measures on the five dimensions of the styles of handling inter-personal conflict after EFA. The EFA established significant factor loadings and identical factor patterns for the two sample groups (Group BM and Group CM). The similarity of factor dimensions between the two groups was further supported by the congruence coefficients.

The modified ROCI-II measure instrument was further validated by CFA for testing the hypotheses of H9, H10 and H11 with regard to the equivalence of the five construct factors of handling inter-personal conflict across British and Chinese cultures. Due to the limitation of the sample sizes, the CFA was performed with an exploratory fashion by unidimensional factor models for each of the five factors. The separate-sample CFA tests with each sample group resulted in support for the

hypotheses H9 and H10. This suggests that the modified ROCI-II factor structure validated by the EFA was further supported by the CFA to be valid for measuring the five styles of handling inter-personal conflict in the British and Chinese cultures.

To test for the factorial invariance of the modified measure models of the factors across British and Chinese cultures, the multi-group simultaneous tests were carried out on each of the five factors between the Group BM and Group CM. The tests of the factor measure models resulted in support of the hypothesis H11. This suggests that the modified ROCI-II measure instrument derived from the EFA is further supported by the CFA to be valid for measuring the five styles of handling inter-personal conflict with adequate cross-cultural equivalence (i.e., with "derived etics") in British and Chinese cultures. The analyses of the properties of the valid models for each of the five factors exhibited acceptable reliability and validity of the modified ROCI-II measure instrument.

A note should be made on some limitations. First, although the EFA identified significant factor patterns for the five factors and similarity between the two sample groups, the CFA tests were limited (because of sample size) to single, unidimensional factor models in reference to each factor. Given the acceptable fit of the unidimensional factor models across the two cultures, the test results should be interpreted with the proviso that equivalent results may not *necessarily* be found for this analysis in comparison with an analysis based on total inter-item covariance matrix of the five factors (i.e., a multidimensional model) (Windle, Iwawaki and Lerner, 1988).

Second, for this reason the discriminant validity of the factors was not assessed with the CFA, but with the inter-factor correlations resulting from the EFA. Third, although the measure items on each factor demonstrated acceptable reliability jointly (i.e., composite reliability), most of the measure items exhibited weak reliabilities as individual indicators for the factors.

These limitations call for caution in interpretation and application of the modified measure instrument. For the present work, it was used as a tentative measure instrument for carrying on comparative analyses. Further test of the measurement models is needed by cross-validation with new data in future research.

5.3.1.5 Summary

This sub-section focused on evaluation of ROCI-II measurement instrument for its applicability with the British and Chinese cultures. By excluding some unreliable measure items, the EFA analyses identified common construct dimensions across the British and Chinese cultures consistent with the original five factors in ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising. The testing of factorial invariance with LISREL multi-sample technique resulted in validated measure scales for each factor with construct equivalence between the British and Chinese cultures. The analyses of the properties of the valid models for each of the five factors exhibited acceptable reliability and validity of the modified ROCI-II measure instrument. It is acknowledged that the LISREL analyses were based on single-factor models recommended in the literature for dealing with the constraint of limited sample sizes, which may limit the generalisability of the model. The respecified ROCI-II model in the present study needs to be cross-validated with new data in the future research. For the present study this model was used as a tentative measurement instrument for data analyses.

5.3.2 Comparative analyses of the styles of handling inter-personal conflict

Various styles of behaviour in handling inter-personal conflict exist in working relationships depending upon the situation (Rahim, 1985). They can be categorised on two basic dimensions: concern for self and for others. The former explains the degree (high or low) to which a person attempts to satisfy his or her own concern in dealing with conflicts. The latter indicates the degree (high or low) to which a person wants to satisfy the concern of others. Rahim (1983a) has set out the two dimensions in five styles of handling inter-personal conflict with distinct characteristics (see Figure 2.2 on page 49).

In the SBJV context, the Chinese and British manager's personal styles in handling inter-personal conflict are of critical importance in affecting inter-personal communication and trust, problem solving, decision making and efficiency of co-operative management of the SBJV. As one of the key objectives, this research focused on comparison of styles of handling inter-personal conflict between samples representing British managers in British organisations (Group BM), Chinese managers in Chinese organisations (Group CM), and dyadic British and Chinese managers in SBJVs (Group BM_{jv} and Group CM_{jv}). The modified ROCI-II unidimensional models for the factors validated in the above EFA and CFA were used as measurement instrument.

The ROCI-II instrument was designed as a self-report questionnaire which asked a respondent to describe his/her preferred styles in dealing with conflict with working partners. This type of the data permitted examination of the styles of handling inter-personal conflict by cross comparison between pairs of the samples. The comparisons were made on mean scores (based on summated scales) of the styles of handling inter-personal conflict with "static-group comparison design" and "non-equivalent control group design" described earlier in this chapter. The "static-group comparison" approach was employed for comparative analyses between Group BM and Group CM, and between Group BM_{jv} and Group CM_{jv}. The "non-equivalent control group"

approach was used for comparative analyses between Group BM and Group BM_{jv}, and between Group CM and Group CM_{jv}.

These comparative analyses were aimed at characterising the differences and similarities in the five styles of handling inter-personal conflict used by British and Chinese managers in different cultural and organisational contexts. Based on the findings inferences can be made in regard to association between cultural values and styles of handling conflict, and the impact of changes in organisational contexts and working partner on individual manager's styles of handling inter-personal conflict. The characteristics identified can help British and Chinese managers to better understand each other for improving their working approaches for better co-operation in SBJVs. These analyses are presented in the following sub-sections.

5.3.2.1 Analysis with Group BM and Group CM

The comparative analysis between Group BM and Group CM was carried out for testing the hypothesis H12:

H12 With regard to the styles of handling inter-personal conflict, there is no difference between British managers in British organisations in the UK and Chinese managers in Chinese organisations in China.

The test of H12 was conducted to identify whether British and Chinese managers use different styles in handling conflict in their working relationships with their fellow colleagues in their home country organisations. The test was carried out by independent *t* test with SPSS based on data from the two sample groups. The results from the *t* test are provide in Table 5.33. In view of the unequal sample sizes that may cause the *t* test function differently than intended, a nonparametric test (the Mann-Whitney U test) was also performed for cross-validation, with the observed significance values included in the same table (the last column) for each analysis.

Table 5.33 Independent samples test (ROCI-II) between Group BM and Group CM

Factors	n		Levene's Test for Equality of Variances		Mean		Std. Deviation		t-test for Equality of Means			Mann-Whitney Test
	Group BM	Group CM	F	Sig.	Group BM	Group CM	Group BM	Group CM	t	df	Sig. (2-tailed)	Sig. (2-tailed)
Integrating*	134	233	1.535	.216	4.20	4.07	.57	.50	2.226 (2.155)	365 (251.091)	.027 (.032)	.002
Obliging	134	233	1.813	.179	3.04	3.16	.66	.60	-1.791 (-1.749)	365 (257.937)	.074 (.081)	.101
Dominating	134	233	3.591	.059	3.16	3.12	.78	.68	.521 (.502)	365 (247.437)	.602 (.616)	.666
Avoiding*	134	233	13.830	.000	2.70	3.31	.88	.68	-7.382 (-6.896)	365 (224.954)	.000 (.000)	.000
Compromising*	134	233	.001	.975	3.71	3.17	.62	.60	8.273 (8.191)	365 (269.039)	.000 (.000)	.000

Note: 1. Scales are inverted as 1= strongly disagree, ... 5= strongly agree.
2. Statistics with equal-variances-not-assumed are provided in brackets.
3. Cases with missing values were excluded listwise.

* Mean difference significant at the .05 level.

Inspection of the statistics of Levene's test for equality of variances in Table 5.33 revealed that the observed significance levels were greater than .01 for all the factors except the factor "avoiding" ($\rho < .01$). Apart from this factor, therefore, the assumption of homogeneity of variance was tenable for the two sample groups, given the inequality of the sample sizes. For the factor of "avoiding" the test was based on the separate-variance *t* test on the SPSS.

The two-tailed *t*-test results revealed that the observed significance levels were less than .05 for the mean differences for three factors: "integrating", "avoiding" and "compromising". This result indicates that significant differences exist at the .05 level in the means of the three factors between the populations associated with the two sample groups. The observed significance levels for the other two factors ("obliging" and "dominating") indicated no significant differences in the means at the .05 level. These results were consistent with the statistics from the nonparametric test. On the basis of these results, the hypothesis (H12) of no differences in means was rejected in regard to the three factors "integrating", "avoiding" and "compromising", and not rejected in regard to the two factors "obliging" and "dominating".

These findings suggest that on average the British and Chinese managers use different degrees of "integrating", "avoiding" and "compromising" styles in handling inter-personal conflict in their organisations. Inspection of the means in Table 5.33 revealed that both British and Chinese managers had mean scores above point 4 on "integrating", with the British manager's level higher than the Chinese manager. Chinese managers had a higher level of mean score on "avoiding" than the British manager, with the British manager's attitude leaning towards "disagree" and the Chinese manager's attitude towards "agree". However, the Chinese manager had a lower mean score on "compromising" than the British manager, with the British manager's attitude leaning towards "agree" and the Chinese manager's attitude close to a neutral level. These differences suggest that when in conflict with their home country colleagues, British managers are more distinctive in using integrating and compromising styles than Chinese managers; while British managers tend not to use an avoiding style, Chinese managers have a tendency to use an avoiding style.

The insignificant differences in the mean scores of other two factors suggest that British and Chinese managers are similar in regard to "obliging" and "dominating" styles in handling inter-personal conflict. The mean scores indicated rather modest levels on "obliging" and "dominating". These findings suggest that neither British nor Chinese managers have a distinctive tendency to use obliging and dominating styles.

5.3.2.2 Analysis with Group BM_{jv} and Group CM_{jv}

The comparative analysis between Group BM_{jv} and Group CM_{jv} was carried out for testing the hypothesis H13:

H13 With regard to the styles of handling inter-personal conflict, there is no difference between British and Chinese managers in SBJVs.

The test of H13 was conducted by independent *t* test to identify whether British and Chinese managers use different styles in handling conflict in their working relationships in Sino-British joint ventures. The independent *t* tests were implemented on SPSS for the five factors of handling inter-personal conflict. The results of the *t*-test are provide in Table 5.34 (results from the nonparametric test are also included for cross-validation). The values of Levene's test for equality of variances indicated that the assumption of homogeneity of variances was tenable for all the factors for the two samples. Hence the independent *t* tests were based on the pooled-variance test.

The two-tailed *t*-test results revealed that the observed significance levels were less than .05 for the means differences of four factors: "integrating", "obliging", "avoiding" and "compromising". Consistent with the nonparametric test, these results indicate that significant differences exist at the .05 level in the means of the four factors between the populations associated with Group BM_{jv} and Group CM_{jv}. On the other hand, the observed significance level for the factor "dominating" was marginally lower than .05 while the nonparametric test revealed greater than .05 observed significance level. Taking these two values together, it was considered that the mean difference

Table 5.34 Independent samples test (ROCI-II) between Group BM_{jv} and Group CM_{jv}

Factors	n		Levene's Test for Equality of Variances		Mean		Std. Deviation		t-test for Equality of Means			Mann-Whitney Test
	Group BM_{jv}	Group CM_{jv}	F	Sig.	Group BM_{jv}	Group CM_{jv}	Group BM_{jv}	Group CM_{jv}	t	df	Sig. (2-tailed)	Sig. (2-tailed)
Integrating*	46	35	.170	.681	3.51	3.99	.64	.61	-3.381 (-3.402)	79 (74.942)	.001 (.001)	.002
Obliging*	46	35	.642	.425	3.52	4.01	.67	.69	-3.270 (-3.253)	79 (71.833)	.002 (.002)	.004
Dominating	46	35	1.009	.318	3.48	3.80	.65	.72	-2.070 (-2.040)	79 (68.928)	.042 (.045)	.068
Avoiding*	46	35	.405	.526	3.06	3.37	.53	.51	-2.635 (-2.646)	79 (74.445)	.010 (.010)	.017
Compromising*	46	35	.238	.627	3.42	4.19	.72	.68	-4.809 (-4.845)	79 (75.238)	.000 (.000)	.000

Note: 1. Scales are inverted as 1= strongly disagree, ... 5= strongly agree.
2. Statistics with equal-variances-not-assumed are provided in brackets.
3. Cases with missing values were excluded listwise.

* Mean difference significant at the .05 level.

for the factors "dominating" was not significant at the .05 level between the two populations associated with the two samples. On the basis of these results, the hypothesis (H13) of no differences in means was rejected in regard to the three factors "integrating", "obliging", "avoiding" and "compromising", but not rejected in regard to the factor "dominating".

These results suggest that on average British and Chinese managers involved in Sino-British joint ventures use different degrees of "integrating", "obliging", "avoiding" and "compromising" styles in handling conflict with their counterparts. Inspection of Table 5.34 revealed that the mean scores of Chinese managers were significantly higher than British managers on all the four factors. This suggests that when in conflict with the British counterpart in a SBJV, the Chinese manager appear more distinctive than the British counterpart in using "integrating", "obliging", "avoiding" and "compromising" styles. In relative terms, the British manager's attitude on "avoiding" appears close to a neutral level while the Chinese manager's attitude is leaning towards agreeing. In addition, they appear similar in using the style of "dominating" at a moderate level, which suggest that both British and Chinese managers in SBJVs have a tendency to be dominating when confronting conflict.

5.3.2.3 Analysis with Group BM and Group BM_{jv}

Independent *t*-test was conducted between Group BM and Group BM_{jv} for testing the hypothesis H14 with regard to the differences in factor means of the styles of handling inter-personal conflict:

H14 With regard to the styles of handling inter-personal conflict, there is no difference between British managers who are working with British colleagues in the British organisations in the UK and those who are working with Chinese counterparts in SBJVs.

By testing the hypothesis H14, it was aimed at examining whether British managers exhibit different styles in handling inter-personal conflict with British colleagues in a British organisation in the UK as compared with handling conflict with Chinese counterparts in Sino-British joint ventures in China. The test was carried out with independent *t*-test based on the data from Group BM and Group BM_{jv}. The results are provided in Table 5.35.

Inspection of the statistics of Levene's test for equality of variances in Table 5.35 revealed that the observed significance levels were greater than .01 for all the factors except the factor "avoiding" ($\rho < .01$). Apart from this factor, therefore, the assumption of homogeneity of variance was tenable for the two sample groups, given the inequality of the sample sizes. For the factor of "avoiding" the test was based on the separate-variance *t* test on the SPSS.

With regard to the mean differences on the five factors between the two groups, the two-tailed *t* tests exhibited significant differences at the .05 significance level for all the four factors. These results were supported by the nonparametric tests. These results led to rejection of the hypothesis H14 of no differences between the two populations associated with the two samples in regard to the four styles of handling inter-personal conflict. Therefore, it can be inferred that British managers' use of "integrating", "obliging", "dominating" and "avoiding" styles would vary between dealing with conflict with British colleagues at home and dealing with conflict with Chinese counterparts in SBJVs.

Inspection of the means in Table 5.35 indicated that British managers had higher scores on "integrating" and "compromising" with British colleagues at home than with Chinese counterparts in SBJVs. When dealing with conflict with Chinese counterparts in SBJVs, British managers had higher scores on "obliging", "dominating" and "avoiding". These differences suggest that, first, British managers tend to use stronger integrating and compromising styles in dealing with conflict with British colleagues at home than with Chinese counterparts in SBJVs. Second, British managers may use relatively stronger styles of obliging and dominating in dealing with

Table 5.35 Independent samples test (ROCI-II) between Group BM and Group BM_{jv}

Factors	n		Levene's Test for Equality of Variances		Mean		Std. Deviation		t-test for Equality of Means			Mann-Whitney Test
	Group BM	Group BM_{jv}	F	Sig.	Group BM	Group BM_{jv}	Group BM	Group BM_{jv}	t	df	Sig. (2-tailed)	Sig. (2-tailed)
Integrating*	134	46	2.035	.155	4.20	3.51	.56	.64	6.899 (6.506)	178 (70.845)	.000 .000	.000
Obliging*	134	46	.070	.792	3.04	3.52	.66	.67	-4.252 (-4.217)	178 (76.970)	.000 (.000)	.000
Dominating*	134	46	2.668	.104	3.16	3.48	.78	.65	-2.522 (-2.752)	178 (92.511)	.013 (.007)	.007
Avoiding*	134	46	12.993	.000	2.70	3.06	.88	.53	-2.601 (-3.285)	178 (130.833)	.010 (.001)	.002
Compromising*	134	46	2.585	.110	3.71	3.42	.62	.72	2.616 (2.435)	178 (69.454)	.010 .017	.016

Note: 1. Scales are inverted as 1= strongly disagree, ... 5= strongly agree.
2. Statistics with separate-variance *t* tests are provided in brackets.
3. Cases with missing values were excluded listwise.

* Mean difference significant at the .05 level.

conflict with Chinese counterparts in SBJVs than with British colleagues at home. A close inspection of the low means on "avoiding" indicates that this style is not particularly preferred by the British manager in either occasions, but especially not so when dealing with conflict with British colleagues at home.

5.3.2.4 Analysis with Group CM and Group CM_{jv}

For testing the hypothesis H15, independent *t*-test was conducted between Group CM and Group CM_{jv} with regard to the differences in factor means of the styles of handling inter-personal conflict:

H15 With regard to the styles of handling inter-personal conflict, there is no difference between Chinese managers who are working with Chinese colleagues in the Chinese organisations in China and those who are working with British counterparts in SBJVs.

By testing the hypothesis H15, it was aimed at identifying whether Chinese managers exhibit different attitudes in handling inter-personal conflict with Chinese colleagues in Chinese organisations as compared with handling conflict with British counterparts in SBJVs in China. Independent *t* test was performed based on the data from the two sample groups. The test results are provided in Table 5.36. The values of Levene's tests for equality of variances indicated that the assumption of homogeneity of variances was tenable at the .01 level for all factors.

Examination of the observed significance levels of t-tests in Table 5.36 indicated significant between-group differences in means for "obliging", "dominating" and "compromising" at the .01 level, but no significant differences for "integrating" and "avoiding" were identified. These results were consistent with the nonparametric test. Hence the hypothesis (H15) of no difference in the styles of handling inter-personal conflict was rejected at the .01 level in regard to "obliging", "dominating" and "compromising", but not rejected in regard to "integrating" and "avoiding".

Table 5.36 Independent samples test (ROCI-II) between Group CM and Group CM_{jv}

Factors	n		Levene's Test for Equality of Variances		Mean		Std. Deviation		t-test for Equality of Means			Mann-Whitney Test
	Group CM	Group CM_{jv}	F	Sig.	Group CM	Group CM_{jv}	Group CM	Group CM_{jv}	t	df	Sig. (2-tailed)	Sig. (2-tailed)
Integrating	233	35	2.816	.092	4.07	3.99	.50	.61	-.939 (-.813)	266 (41.210)	.349 (.421)	.379
Obliging*	233	35	2.657	.104	3.16	4.01	.60	.69	7.692 (6.920)	266 (42.029)	.000 (.000)	.000
Dominating*	233	35	.539	.464	3.12	3.80	.68	.72	5.485 (5.223)	266 (43.429)	.000 (.000)	.000
Avoiding	233	35	3.929	.048	3.31	3.37	.68	.51	.497 (.611)	266 (53.710)	.619 (.544)	.832
Compromising*	233	35	.998	.319	3.17	4.19	.60	.68	9.168 (8.332)	266 (42.263)	.000 (.000)	.000

Note: 1. Scales are inverted as 1= strongly disagree, ... 5= strongly agree.
2. Statistics with separate-variances *t* tests are provided in brackets.
3. Cases with missing values were excluded listwise.

* Mean difference significant at the .01 level.

Inspection of the mean scores of the three different factors indicated that Chinese managers use higher level of obliging, dominating and compromising styles in dealing with conflict with British counterparts in SBJVs than dealing with conflict with Chinese colleagues in Chinese organisations. However, the Chinese manager appears consistent in using a moderate level of integrating style and a modest level of avoiding style in both cases.

5.3.2.5 Discussion

Studies on behavioural styles of managing conflict have shown that home culture orientation affects executives' responses to conflicts (Elsayed-Ekhouly and Buda, 1996; Tse, Francis and Walls, 1994). Gudykunst, Gao and Franklyn-Stokes' (1996) research has found that British people show greater ability to modify their self-presentations, tendency to avoid public performances, and sensitivity to others' expressive behaviour than Chinese people, whereas Chinese people pay more attention to social comparison information and to others' status characteristics than the British. It is expected that Chinese people would be likely to employ a relatively indirect-inactive way of dealing with conflict, such as avoiding or ignoring the conflict situation (Leung, 1988; Tang and Kirkbride, 1986; Chiu and Kosinski, Jr., 1994).

In the conflict management literature, Adler (1991) described a process called synergistic problem solving, in which each party describes the conflict from his or her point-of-view, the cultural assumptions underlying each description are identified, similarities and differences in assumptions are assessed, and new solutions that satisfy both parties are produced. However, Weldon (1992) speculated that this approach may not be appropriate for conflict management with Chinese managers in IJVs because the synergistic problem solving process prescribes a very direct, explicit approach that might be inappropriate when Chinese managers are involved.

Several studies on conflict management reported that Chinese people tended to opt for non-confrontational approaches and passive strategies to conflict resolution, choose more accommodating styles and favoured the less assertive "compromising"

and "avoiding" styles, whereas British appeared to exhibit a rather competitive style and an inclination towards the more assertive "collaborating" and "competing" styles (Jehn and Weldon, 1992; Leung, 1988; Tang and Kirkbride, 1986; Westwood, Tang and Kirkbride, 1992; Wofson and Norden, 1984). However, many of these findings cannot be considered conclusive in terms of generalisability to British business executives in the UK and business executives in the P.R. China because of the limitations in their research contexts and sampling domain (see Chapter 2 for detailed discussion).

Given the importance of cultural orientations and "self-monitoring" characteristics, it is argued that individual's behavioural patterns respond to the rules considered as appropriate by the specific social setting and situation (Chiu and Kosinski, Jr., 1994). In this research it was speculated that the British and Chinese managers exhibit different conflict management styles which are conditional on the nature of interaction (i.e., intra-cultural versus cross-cultural) and characteristics of organisational mechanism (i.e., a home-country organisation versus a SBJV). A unique value of the present study lies in that direct comparative analyses were accomplished by using data from samples comprising British and Chinese managers in their home-country organisations, and dyadic British and Chinese managers working in SBJVs. Through testing hypotheses H12, H13, H14 and H15 in this sub-section, empirical evidence has been identified to clarify the speculations with regard to the styles of handling conflict between the British and Chinese managers in different contexts and working relationships.

Group BM and Group CM

The test of H12 indicated that when in conflict with their fellow colleagues in home-country organisations, both British and Chinese managers have a rather low tendency to use obliging and dominating styles. Obliging is associated with attempting to play down the differences and emphasising similarities to satisfy the concern of the other party; dominating is identified with win-lose orientation or with competing behaviour to win one's position (Rahim and Blum, 1994). In Rahim's two dimensional model,

obliging represents a high degree of concern for both self and others, and dominating represents a high concern for self but low concern for others. Apparently, these two types of conflict management style are not preferred by British and Chinese managers when dealing with their home country colleagues. It can be expected that British and Chinese managers will not go all out to compete for wining their objectives and ignore the needs of the other party, neither will they exhibit self-sacrifice or obedience to the other party's wishes.

The test for H12 revealed that both British and Chinese have a clear preference for an integrating style but they are distinctively different in extent. This style is characterised by high concern for self and others, involving open and direct communication which makes way for problem solving (Prein, 1976; Rahim and Blum, 1994). The finding indicates that British and Chinese managers both use this style more than other styles, however, they are significantly different in the extent of using this style. The British manager's higher preference to this style suggests that they are more distinctive than Chinese managers in terms of openness in communication and problem solving in a conflict situation. As a result, this style may lead British to appear more creative in finding solutions to problems than Chinese managers (cf. Rahim and Blum, 1994).

Significant differences were also identified in avoiding and compromising styles: British managers tend not to prefer avoiding while Chinese managers are inclined to opt for it; British managers are more inclined to opt for compromising than Chinese managers. Avoiding style is associated with ignoring, withdrawal or side-stepping behavioural characteristics when confronting with conflict; compromising involves give-and-take or sharing so that both parties give up something to make a mutually acceptable decision (Rahim and Blum, 1995). The different preferences in these two styles suggest that British managers will not ignore or withdraw from any confrontation with their colleagues; they will attempt to split the difference, exchange concession or seek a quick middle-ground position. In contrast, Chinese managers may postpone a conflict issue until a better time, withdraw from direct confrontation

or avoid acknowledging dispute in public in order to save each other's face and maintain a harmonious relationship.

Group BM_{jv} and Group CM_{jv}

The test of H13 for equality of means in the five styles of handling inter-personal conflict between British and Chinese managers both working in the SBJVs revealed significant differences in their styles except one factor "dominating". It has appeared that both British and Chinese managers have a clear (although not strong) tendency to use a dominating style when falling into conflict with their counterparts in SBJVs. This finding seems consistent with IJV partners' general tendency toward taking control on important matters. It further suggests that British and Chinese managers become more competing if they have to face conflict matters in SBJVs.

The mean scores in "integrating", "obliging" and "compromising" indicated that both British and Chinese managers have a tendency to use these styles, but differ in extent. It appeared that Chinese mangers are more distinctive in preferring these styles than British managers, implying that Chinese managers have a stronger tendency in showing high concern for the British counterparts than British managers do for the Chinese counterparts when conflict occurs in SBJVs. This may reflect the Chinese cultural characteristics, as Tse, Francis and Walls (1994) noted, that "overt defiance in a conflict situation would be regarded as unnecessarily confrontational and an explicit attack on the "face" or self-esteem of the other side". It may also be because in Chinese culture a foreigner generally is treated as a "foreign guest" ("wai bin") and may receive higher concern and courtesy than a local Chinese may receive, even in a conflict situation. With regard to the style of avoiding, British managers exhibited no inclination (i.e, a neutral attitude), while Chinese managers showed a moderate tendency. Hence, it confirms that with an individualistic cultural orientation, a British manager may be expected to ignore, withdraw or side-step any issues that have caused conflict with a Chinese counterpart in a SBJV.

Group BM and Group BM_{jv}

The test of H14 for equality of means for the five styles of handling inter-personal conflict indicated significant differences between British managers at home organisations and those in SBJVs. It is worth noting that British managers exhibited a higher degree of integrating and compromising styles in handling conflict with British colleagues at home than in handling conflict with Chinese counterparts in SBJVs. In contrast, when dealing with Chinese counterparts in SBJVs, British managers exhibited a higher degree of obliging, dominating and avoiding styles (with the use of avoiding at the most modest level compared to other styles) than dealing their British colleagues at home organisations. This finding is important because it suggests that the behavioural patterns of dealing with conflict are not universally constant. They can be influenced not only by one's cultural orientation, but also by the specific context that defines the nature of the conflict. It is therefore more important to view the styles of handling inter-personal conflict as culture-context-specific styles than only culture-specific styles.

Group CM and Group CM_{jv}

The test of H15 revealed similar alterations in the Chinese managers' styles of handling conflict in different organisational context as exhibited in British managers' styles discussed above. The test indicated significant differences in obliging, dominating and compromising styles between Chinese managers working with Chinese colleagues at their local organisations and those working with British counterparts in SBJVs. The higher scores on these factors recorded by the Chinese managers in SBJVs suggest that they tend to use stronger styles of obliging, dominating and compromising in dealing conflict with British managers in SBJVs than with Chinese colleagues in home organisations. However, the tendency to use dominating style is slightly lower than the other two styles. It can be inferred that although Chinese managers have a low tendency to use obliging, dominating and compromising styles in handling conflict with Chinese colleagues, they may show a stronger tendency to use these styles when the face conflict with British counterparts

in SBJVs. This finding again indicates the significance of conflict context specificity that alters one's culturally-bound behavioural pattern in handling conflict.

The test for equality of means showed no significant differences in the styles of integrating and avoiding between the Chinese managers working with their Chinese colleagues and those working with British counterparts in SBJVs. It appears that Chinese managers have a clear preference for the integrating style and a moderate tendency toward the avoiding style in both situations. Hence it can be suggested that these two relatively stable styles have reflected close association with the Chinese cultural orientation and are less affected by situational factors than other styles.

An integrated review of differences

For clarity of reviewing the alteration in styles of handling conflict in different contexts, it is considered appropriate to introduce the integrative-distributive-dimension model proposed by Rahim and Blum (1994, based on Walton and McKersie, 1965), which is presented in Figure. 5.9. In this model the integrating and avoiding styles are tapped by the integrative dimension that represents the *degree* (high or low) of satisfaction of concerns received by self and others; the dominating and obliging styles are tapped by the distributive dimension that represents the *proportion* of the satisfaction of concerns received by self and others (Rahim, 1992; 1994). A concise interpretation of the model is given by Rahim and Blum (1994):

> "In the integrative dimension, integrating attempts to increase the satisfaction of the concerns of both parties by finding unique solutions to the problems acceptable to them. Avoiding leads to the reduction of satisfaction of the concerns of both parties as a result of their failure to confront and solve their problems. In the distributive dimension, whereas dominating attempts to obtain high satisfaction of concerns for self (and provide low satisfaction of concerns for others), obliging attempts to obtain low satisfaction of concerns for self (and provide high satisfaction of concerns for others). Compromising represents the point of intersection of the two dimensions - that is, a middle-ground position where each party receives an intermediate level of satisfaction of their concerns from the resolution of their conflicts." (P.7)

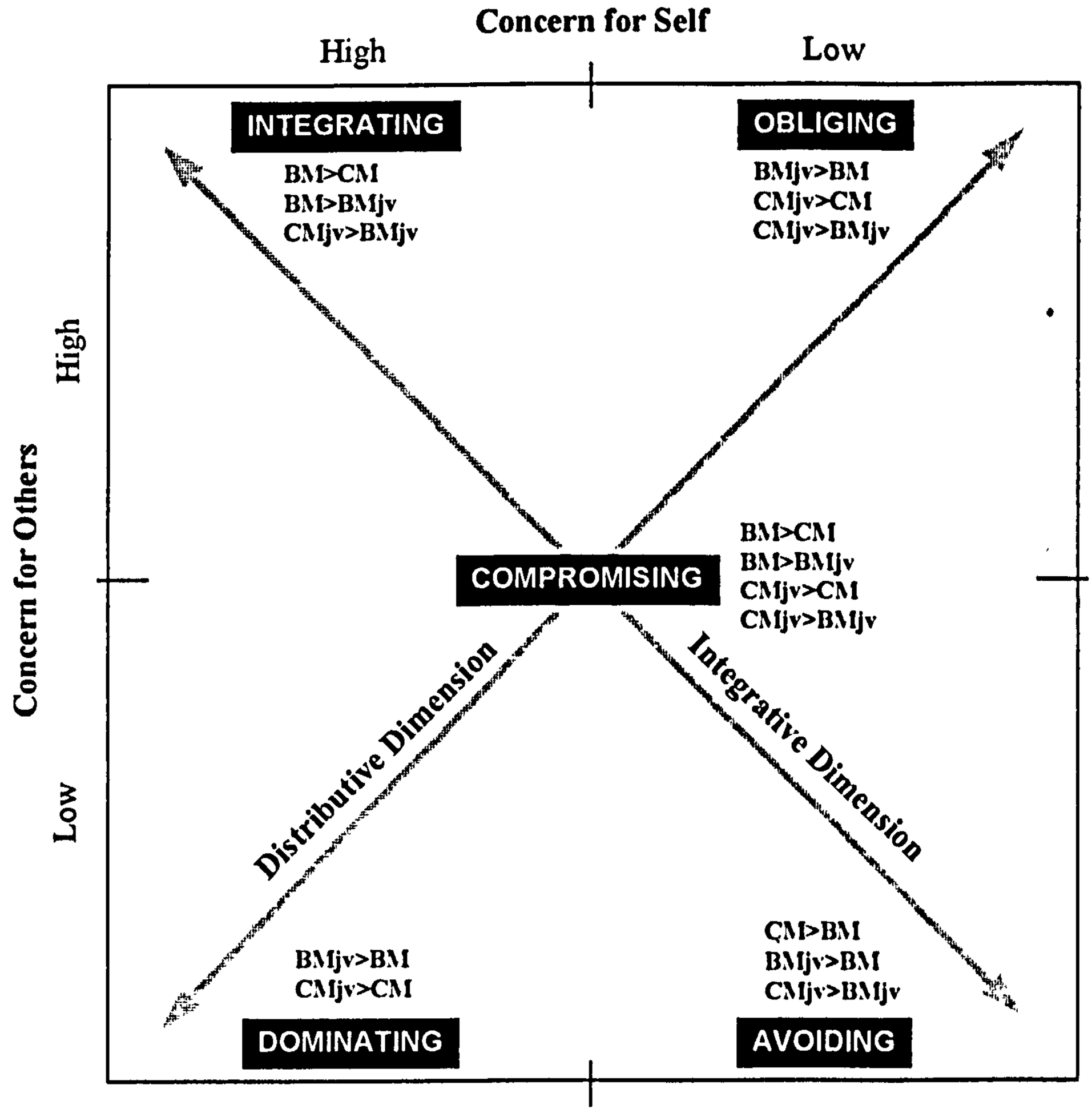

Figure 5.9 Integrative-distributive-dimension model of styles of handling inter-personal conflict
(Source: Adapted from Rahim and Blum, 1994, p.8.)

The differences in the five styles of handling inter-personal conflict identified in the present study can be viewed by assistance of the labels representing each populations of the managers under the hypothesis tests along the two dimensions in Figure 5.9. For instance, "BM" represents British managers in home organisations, "BM_{jv}" represents British managers in SBJVs, "CM" represents Chinese managers in home organisations, and "CM_{jv}" represents Chinese managers in SBJVs. The conflict situations are defined as with home country colleagues when in home organisations and with British or Chinese counterparts respectively when in SBJVs.

As Figure 5.9 reveals, on the integrative dimension, British and Chinese managers behave in distinctively different styles in handling conflict with their home colleagues. In brief, British managers may attempt to increase the satisfaction of the concerns of both parties by finding unique solutions to the problems acceptable to them. In contrast, Chinese managers may attempt to avoid direct confrontation, which may lead to failure in finding solutions to the problems and reduction of concerns for both parties. This also implies that Chinese managers may prefer to avoid conflicts in advance of their occurrence (Tse, Francis and Walls, 1994). On the distributive dimension, there is no distinctive difference between British and Chinese managers' styles in handling conflict with their home colleagues. However, it has appeared that British managers have a higher tendency to use compromising style than Chinese managers, implying that they tend to approach to a middle-ground position so that each party receives an intermediate level of satisfaction of their concerns from the solution to the problems.

However, when working in SBJVs, British managers appear to move from a high to a low degree of satisfaction of concerns received by self and others. They become more inclined to avoiding, implying that they become less inclined to direct confrontation with Chinese counterparts. This alteration in their styles on the integrative dimension clearly suggests that the change from working with home colleagues to working with Chinese in SBJVs may cause them to use different styles in dealing with conflict.

The differences exhibited by the Chinese managers in Figure 5.9 also indicates variability in the styles of handling conflict when moving from working with home colleagues to working with British counterparts in SBJVs. It has appeared that Chinese managers have a distinctive and higher tendency on the distributive dimension in SBJVs than in their home organisations. This implies that when dealing with conflict with British counterparts in SBJVs, Chinese managers become stronger in attempting to obtain a higher proportion of satisfaction of concerns for self as compared with dealing with Chinese colleagues in home organisations. These findings in the alteration of both British and Chinese managers' styles of handling conflict in

SBJVs provide important evidence for enhancing understanding of the issue and further investigation in the future research.

5.3.2.6 Summary

In this section the hypotheses H12, H13, H14 and H15 were tested by comparative analyses on the issue of the styles of handling inter-personal conflict involving British and Chinese managers in two main types of work context: home-country organisations and SBJVs. The tests were carried out by independent *t* tests on the differences of the means measured by the modified, validated ROCI-II measure instrument. The tests resulted in rejection of the hypotheses of no between-group differences for some factors and non-rejection for some other factors. An overview of the decisions on the tests for these hypotheses corresponding to the appropriate factors are presented in Table 5.37. For the convenience of examining the between-group differences, the test results are summarised in Table 5.38 in reference to the differences in these styles between the sample groups.

The findings from these analyses have provided empirical evidence that not only supports the proposition that cultural orientations influence the styles of handling inter-personal conflict, but also points to the significance of the context specificity of styles of handling inter-personal conflict. It is argued that the patterns of handling inter-personal conflict exhibited by people from a certain culture should not be taken as universally constant behavioural patterns. Although such patterns are rooted in the cultural values and norms, they may be altered by the bounding force in a certain inter-personal relationship and the organisational mechanism in which inter-personal interactions take place. It is therefore more important to view the styles of handling inter-personal conflict as culture-context-specific styles than only culture-specific styles. These findings bear important implications for future research as well as improving understanding between British and Chinese managers in SBJVs. On the basis of these findings, the managerial implications with regard to each of the factors will be discussed in the following chapter.

Table 5.37 Summary of hypotheses testing of H12, H13, H14 and H15 on the styles of handling inter-personal conflict

	Hypotheses	Non-rejection	Rejection
H12	With regard to the styles of handling inter-personal conflict, there is no difference between British managers in British organisations in the UK and Chinese managers in Chinese organisations in China.	"Obliging" "Dominating"	"Integrating" "Avoiding" "Compromising"
H13	With regard to the styles of handling inter-personal conflict, there is no difference between British and Chinese managers in SBJVs.	"Dominating"	"Integrating" "Obliging" "Avoiding" "Compromising"
H14	With regard to the styles of handling inter-personal conflict, there is no difference between British managers who are working with British colleagues in British organisations in the UK and those who are working with Chinese counterparts in SBJVs.		"Integrating" "Obliging" "Dominating" "Avoiding" "Compromising"
H15	With regard to the styles of handling inter-personal conflict, there is no difference between Chinese managers who are working with Chinese colleagues in Chinese organisations in China and those who are working with British counterparts in SBJVs.	"Integrating" "Avoiding"	"Obliging" "Dominating" "Compromising"

Table 5.38 Summary of the results from testing H12, H13, H14 and H15 on the between-group differences of the styles of handling inter-personal conflict

Factors	Self-reported styles of handling inter-personal conflict measured by the re-specified ROCI-II			
	Group BM & Group CM	**Group BM_{jv} & Group CM_{jv}**	**Group BM & Group BM_{jv}**	**Group CM & Group CM_{jv}**
Integrating	BM > CM	$BM_{jv} < CM_{jv}$	$BM > BM_{jv}$	Similar, moderate
Obliging	Similar, modest	$BM_{jv} < CM_{jv}$	$BM < BM_{jv}$	$CM < CM_{jv}$
Dominating	Similar, modest	Similar, moderate	$BM < BM_{jv}$	$CM < CM_{jv}$
Avoiding	BM < CM	$BM_{jv} < CM_{jv}$	$BM < BM_{jv}$	Similar, modest
Compromising	BM > CM	$BM_{jv} < CM_{jv}$	$BM > BM_{jv}$	$CM < CM_{jv}$

5.4 Managerial competency[24]

In this section the hypothesis test was focused on the issue of the perceived counterpart's managerial competency between British and Chinese managers in Sino-British joint ventures. A general hypothesis is stated as follows:

H16 There is no difference in perceived managerial competency as reflected in the twenty-one items of characteristics between British and Chinese managers as counterparts in SBJVs.

By testing the differences in the means between the two groups on each of the characteristics, some insights can be gained into how the British and Chinese mangers judge each other on the managerial skills according to their perceptions of their counterparts' behaviour on the daily basis of managing the joint ventures. The tests of the hypotheses were based on the data from the samples of Group BM_{jv} and Group CM_{jv}. The full statements of the scales are represented in Table 5.39.

5.4.1 Comparison between Group BM_{jv} and Group CM_{jv}

The measures of managerial competency were based on single items on five point Likert scales (1=Absolutely true, ... 5=Absolutely not true). Two-tailed independent *t* tests were used to test for differences between the mean levels of managerial competency rated by the British and Chinese managers on each other in the Sino-British collaborations. The results of the tests across the two sample groups are provided in Table 5.39. The Levene's test for equality of variances exhibited tenability of the assumption of homogeneity of variances for the measure items only except the item numbered 15 in Table 5.39. The tests were therefore based on pooled-variance *t*-test except for item 15, which was based on separate-variance test.

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[24] This section is reported in a paper "Culture and competence in the management of Sino-British joint ventures: A question of style?" presented at the BAM 1997 Conference, 8-10 September, Queen Elizabeth II Conference Centre, London.

Table 5.39 Independent Samples Test - Managerial Competency

		Levene's Test for Equality of Variances		Mean		Std. Deviation		t-test for Equality of Means			Mean Difference
		F	Sig.	British	Chinese	British	Chinese	t	df	Sig. (2-tailed)	
1	Is able to make quick decisions	2.068	.154	2.61	2.00	1.14	1.10	2.389	78	.019	.61
2	Accepts new ideas	.497	.483	2.35	1.91	.92	.87	2.142	78	.035	.44
3	Has careful preparation before a decision	5.627	.020	2.15	1.59	1.17	.61	2.557	78	.012	.56
4	Has clarity of purpose	2.258	.137	2.43	1.53	.93	.66	4.821	78	.000	.91
5	Creates a climate characterised by trust	5.020	.028	2.47	1.74	1.14	.83	3.161	77	.002	.73
6	Encourages visions	.332	.566	3.07	1.94	1.00	.92	5.148	78	.000	1.12
7	Creates order and structure	6.373	.014	2.72	1.71	1.05	.76	4.777	78	.000	1.01
8	Is flexible	.498	.482	2.89	2.24	1.04	1.05	2.786	78	.007	.66
9	Fully informs staff of decisions	.048	.828	3.11	2.41	1.02	.92	3.149	78	.002	.70
10	Gives continuous feedback of results	.256	.614	3.07	1.94	.93	1.04	5.079	78	.000	1.12
11	Gives responsibility to staff members	4.699	.033	2.76	1.91	1.08	.79	3.878	78	.000	.85
12	Handles conflicts openly	2.899	.093	2.98	1.88	1.10	.82	4.843	76	.000	1.10
13	Has a sense of humour	1.391	.242	1.76	1.85	.82	.99	-.454	78	.651	-.09
14	Is honest in communication	.140	.710	2.17	1.50	.80	.71	3.918	78	.000	.67
15	Is a careful planner	8.853	.004	2.67	1.53	1.08	.66	5.477	78	.000	1.14
16	Is cautious in action	.553	.459	2.17	1.79	.95	.77	1.912	78	.060	.38
17	Let the staff member participate in decisions	.095	.759	2.89	2.64	.93	.93	1.182	76	.241	.25
18	Makes sure plans and rules are followed	3.704	.058	2.39	2.00	.91	.82	1.990	78	.050	.39
19	Stimulates discussion among staff members	.945	.334	2.89	2.35	1.18	.95	2.189	78	.032	.54
20	Stimulates individual achievement	.185	.668	2.74	2.24	1.02	.99	2.214	78	.030	.50
21	Shows strong dedication to work	2.892	.093	1.63	1.44	.64	.50	1.420	78	.160	.19

Note: 1. Items of significant difference are indicated by the shaded areas.
2. Scale: 1 = Absolutely true, ... 5 = Absolutely not true.
3. Cases with missing values were excluded analysis-by-analysis. Group BMjv n=47, Group Cmjv=33.
4. Areas encircled with doted lines indicate the items with significant between-group differences at the .01 level.

The test results revealed that the observed significance levels were less than .01 for the items from the 4th to 12th and 14th and 15th. These results suggest that the mean levels of managerial competency perceived by the British and Chinese managers on each other were significantly different at the .01 level as measured by these items. The hypothesis H16 of no difference in perceived managerial competency between the British and Chinese managers in the Sino-British collaborations had to be rejected with regard to the characteristics reflected by these items. On observation of the results, it appeared that in general the Chinese respondents rated their British counterparts at higher means than the British respondents rated their Chinese counterparts in reference to these characteristics.

With regard to the items 1-3, 13, and 16-21, the two-tailed *t*-test statistics were not significant at the .01 level. This gives support for non-rejection of the hypothesis H15 with regard to these items. This result suggests that the British and Chinese counterparts in the Sino-British collaborations perceive each other as demonstrating approximately the same degree of managerial competency as reflected in the characteristics 1-3, 13, and 16-21 in Table 5.39.

5.4.2 Discussion

Research in management and organisational behaviour has identified several culturally distinctive characteristics in British and Chinese management styles. In general, the British managers and management styles have been characterised by generalism and managerialism-orientation (i.e., a generalist outlook), informality (i.e., informal in personal exchanges), centrality of humour (i.e., readiness to joke about business matters), persuasion (i.e., persuasion-oriented), flexibility (i.e., intuitive in strategic decision-making) and network-centred (i.e., to hold a more inter-personal and subjective view of the organisation world) (Barsoux and Lawrence, 1990; Brewster, Lundmark and Holden, 1993; Chandler, 1986; Laurent, 1986).

The Chinese management styles have been cultivated by the Chinese cultural values as well as the political and economic systems since 1949. For instance, Vertinsky, Tse,

Wehrung and Lee (1990) have found that in China, the traditional values such as ascribed status and loyalty are regarded as bases for identification of a good manager (but these traditional values are not preserved in Hong Kong). The dominant ideology and the regulatory environment in China require participative decision making in organisations. They have also found that in large-size organisations, Chinese managers value clear and formal rules of action, well-specified lines of authority, and a high degree of control over employees, which are likely to reduce problems of losing face, contain conflict and reduce ambiguity. In small and medium-sized organisations, however, relationships between members are well defined and culturally coded, and disciplined and unambiguous relationships emerge through socialisation processes without the need to resort to clear formal standard operating procedures, formal role descriptions and a clear authority structure.

Given the complexity of the Chinese cultural value and management systems that are still under change, some culturally distinct features of the Chinese management style can be identified which include centrality of "guanxi" (i.e., particularistic inter-personal ties in China), centrality of "face" (i.e., "lien" referring to the moral character such as decency and integrity, and "mianzi" referring to one's status and reputation acquired through one's own efforts) (Hu, 1944; Tung, 1996), collective decision-making (Wang, 1994) (i.e., appreciation of joint decision making and emphasis of "managerial transparency"), deference to seniority (i.e., valuing age and authority (Yao, 1987) and unquestioned respect for superiors and preference on authoritarian decision styles (Tse, Lee, Vertinsky, and Wehrung, 1988).

It has been found that joint ventures that match young foreign managers with significantly older Chinese managers may have some difficulties (Osland, 1990). The deference to seniority is also reflected in the strong sense of hierarchy (i.e., order and relationship), which defines one's place and the role in a social relation. It has been found that in relationship management the Chinese emphasise the importance of maintaining harmonious inter-personal relationships and acting in a manner appropriate to one's position in a hierarchical social situation (Stover, 1974).

Overall it can be seen that there are some aspects in which British and Chinese managers demonstrate similar characteristics, while there are some other aspects in which British and Chinese managers have their own unique characteristics. In terms of managerial competence, there has not been any research that compares the British and Chinese managers in the context of co-operative working relationships in the joint ventures. In Brewster, Lundmark and Holden's study (1993) in which twenty-one features to represent the characteristic traits of a competent manager have been identified, they found that in terms of the most important features for "a good manager", the British were most likely to identify flexibility, the stimulation of individual achievement and the creation of a climate of trust. In another study, Vertinsky, Tse, Wehrung and Lee (1990) have found that in China, the traditional values such as ascribed status and loyalty are regarded as bases for identification of a good manager, and participative decision making in organisations are encouraged. They have also found that in large-sized organisations, Chinese managers value clear and formal rules of action, well-specified lines of authority, and a high degree of control over employees, while in small and medium-sized organisations emphasis is placed on relationships through socialisation processes without resorting to a formal structure and system.

The comparative analyses in this study have revealed significant differences in some of the characteristics of managerial competence as perceived by the British and Chinese managers between each other in SBJVs. When the British and Chinese managers in the SBJVs were asked to rate their counterparts on Brewster, Lundmark and Holden's 21-item scale, both similarities and differences were found in some of the features. As Table 5.39 indicate, no significant differences existed between the British and Chinese mangers in the mean scores of mutual perceptions on items 1- 3 (is able to make quick decisions; accepts new ideas; and has careful preparation before a decision), 13 (has a sense of humour), 16-21 (is cautious in action; let the staff member participate in decisions; makes sure plans and rules are followed; stimulates discussion among staff members; stimulates individual achievement; and shows strong dedication to work). The mean scores range between 1.44 to 2.89, which suggest that generally British and Chinese mangers see each other as competent in terms of

these features. Specifically, they strongly confirmed their partner's strong dedication to work (item 21) and sense of humour (item 13). Both sides regarded their partners as being cautious in action (item 16), taking decisions with careful preparation (item 3), making sure plans and rules are followed (item 18), stimulating discussion among staff members (item 19), encouraging participative decision making (item 17), and accepting new ideas and being quick in making decisions. It implies that British and Chinese managers share some common features as described by these items.

With regard to other features (items 4-12, 14-15) both British and Chinese managers positively rated each other as being competent. As can be seen in Tables 5.39, the mean scores indicate that on average the Chinese managers rated the British managers more positively that the British managers rated the Chinese managers. For instance, in terms of item 5 (trust) and item 8 (flexibility) identified as the most important by the British managers in other studies, Chinese managers rated British managers higher than the British managers rated the Chinese managers. On items regarding honesty (item 14), planning in work (item 15), formal structure in work (item 7), handling conflict openly (item 12), Chinese managers also rated the British managers more positively than the British managers rated the Chinese managers.

There are three exceptions, however, with regard to item 6 (encourages visions), item 9 (fully informs staff of decisions) and item 10 (gives continuous feedback of results). On these features the British managers rated the Chinese managers slightly towards unfavourable direction (above point 3 towards point 4 "not true"). These ratings suggest that the British managers were not confident about the Chinese partners' competence in terms of these features. In contrast, the Chinese managers perceived the British managers as competent in terms of these features. This fact suggests unbalanced perceptions of each other's managerial competence and they may be problematic in maintaining working relationships between the British and Chinese managers.

These findings have provided insights into the image of British and Chinese managers in each other's mind. The significance of the findings lies in that in co-operative

management relationships how one is perceived by others is more important than how one sees oneself. For instance, because of the complexity of the IJV manager's roles, there is increased need to communicate with executives at multiple levels and diverse partner companies and satisfy their preferences (Frayne and Geringer, 1994). According to Frayne and Geringer's (1994) "self-management" model (also called self-control or self-regulation), an IJV manager involves a) self-observation or self-assessment, which provides the individual with a baseline against which future changes can be evaluated and specific performance goals are set; b) comparison of information obtained from continued self-observation with the goals for the given behaviour, and the individual engages in self-monitoring; and c) self-administration of reinforcers or punishers, contingent upon the degree to which the behaviour has diverged from the performance goals. The cultural and managerial context of IJVs will determine the characteristics of the process and how the managers adapt themselves to the working relationship with partners.

With regard to SBJVs, the understanding of how British and Chinese managers have perceived their counterparts' competence provides unique value in assisting their self-management process to achieve better fit with the managerial partners and the working environment. They can serve as a guideline for both sides with regard to how to improve both their management competence and their image in co-operative working relationships. It must be noted, however, that these features have not been tested with the Chinese sample in terms of their rank of importance although they were tested with the British sample in a previous study. Further research is needed to extend the current study into examining the relative importance of each characteristics as perceived by the managers from different cultures, and how they are associated with the quality of the working relationship between expatriate and local managers and how such working relationship quality affect the overall performance of the IJVs.

5.4.3 Summary

The comparative analyses in this section revealed significant differences in some of the characteristics of managerial competency as perceived by the British and Chinese managers between each other in SBJVs. For the convenience of examining the item-wise differences in perceptions between the British and Chinese managers, Table 5.40 presents a summary of the results by categorising the items with significant differences and those with no differences between the two sample groups. The managerial implication of these findings will be discussed in the next chapter.

Table 5.40 A summary of testing differences between Group BM_{jv} and Group CM_{jv} on managerial competency characteristics (at the .01 level)

	Hypotheses & characteristics of managerial competency	Decision on the hypothesis test	Between-group Differences
H16	There is no difference in perceived managerial competency as reflected in the twenty-one items of characteristics between British and Chinese managers as counterparts in SBJVs.		
1	Is able to make quick decisions	Non-rejection	No difference
2	Accepts new ideas	Non-rejection	No difference
3	Has careful preparation before a decision	Non-rejection	No difference
4	Has clarity of purpose	Rejection	Group CM_{jv}>Group BM_{jv}
5	Creates a climate characterised by trust	Rejection	Group CM_{jv}>Group BM_{jv}
6	Encourages visions	Rejection	Group CM_{jv}>Group BM_{jv}
7	Creates order and structure	Rejection	Group CM_{jv}>Group BM_{jv}
8	Is flexible	Rejection	Group CM_{jv}>Group BM_{jv}
9	Fully informs staff of decisions	Rejection	Group CM_{jv}>Group BM_{jv}
10	Gives continuous feedback of results	Rejection	Group CM_{jv}>Group BM_{jv}
11	Gives responsibility to staff members	Rejection	Group CM_{jv}>Group BM_{jv}
12	Handles conflicts openly	Rejection	Group CM_{jv}>Group BM_{jv}
13	Has a sense of humour	Non-rejection	No difference
14	Is honest in communication	Rejection	Group CM_{jv}>Group BM_{jv}
15	Is a careful planner	Rejection	Group CM_{jv}>Group BM_{jv}
16	Is cautious in action	Non-rejection	No difference
17	Lets the staff member participate in decisions	Non-rejection	No difference
18	Makes sure plans and rules are followed	Non-rejection	No difference
19	Stimulates discussion among staff members	Non-rejection	No difference
20	Stimulates individual achievement	Non-rejection	No difference
21	Shows strong dedication to work	Non-rejection	No difference

5.5 Managerial role expectation[25]

One of the key issues in managing an international joint venture is understanding who plays what roles in the management of the venture. Underlying role obligations are issues of how management responsibilities are shared or divided among local and expatriate personnel, to what extent the responsibilities are understood, and, most importantly, to what extent a manager's frame of reference (from one culture by which role expectations are held) fits with the frame of reference of a manager from another culture.

People from different cultures are known to have different role expectations that guide their behaviour (Berry, Poortinga, Segall and Dasen 1992). In managing an international joint venture, problems often result from misunderstanding and lack of communication at an interpersonal level. Misunderstanding can often result from different perceptions of the managerial roles of each other, because different focal points in the categorisation of the managerial task in their own culture and organisation may lead to variations of role expectations. On one level the lack of communication may not be because people do not want to communicate; it may simply be because people are unaware of the need. On another level, the ignorance of the need for communication may be a result of being unaware of misunderstandings, or of differences in understanding. Misunderstandings are mismatches of comprehension that may result in conflicting viewpoints, and differences in understanding are mismatches of comprehension that may not result in conflicting viewpoints. Either of these, however, can lead to role ambiguity and role conflicts.

This section presents results from an pilot investigation that is part of the present research. The investigation is to examine what roles managers with certain identities

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[25] This section is reported in a paper presented at the AIB (UK) 22nd Annual Conference *International Business: Functional Dimensions*, 7-8 April 1995, the University of Bradford Management Centre. Most of the contents are reported in the Leicester Business School Occasional Paper 28 "Managerial role expectations in Sino-British joint ventures: Match or mis match?", July 1995, ISBN 1-85721-092-1.

are perceived to play in the mind of British and Chinese managers who work in the same joint venture. On the basis of the results, discussions are focused on developing a conceptual framework and methodology for future research. The discussion was based on qualitative analyses of structured interviews from five cases.

5.5.1 Managerial roles in joint ventures

Generally speaking, managers and the people they lead and report to are interacting in a broad social system. The responsibility for each goal and sub-goal is often vague, since people are not often allocated to tasks directly but only through a mediating set of positions or offices (Oeser and Harary 1966). It may be impossible to structure an organisation so that a given objective is someone's personal responsibility (Weihrich and Koontz 1993). Managers of joint ventures will work together most effectively if they know the parts they are to play and the way their roles relate to one another. In expectancy theory, poor performance results not necessarily from poor motivation, but from misunderstanding concerning the role one is expected to play (Greenberg and Baron 1993). Unfortunately, role ambiguity and role conflicts are commonly experienced by managers in international joint ventures (Schaan and Beamish 1988; Shenkar and Zeira 1992).

In China, the "Joint Ventures Implementation Regulations" broadly specifies the roles of the general manager as being the chief executive of the joint venture and maintaining full autonomy within the policy guidelines set by the board, and being assisted by deputy manager(s) and divisional managers for day-to-day operations and management. However, the role establishment in a specific joint venture is often a complicated matter.

A question that arises in reviewing the literature on managerial roles of joint ventures (Schaan and Beamish 1988; Shenkar and Zeira 1992; Nyaw 1993; Cui-Chi, 1993) is that given the aggregated description of managerial tasks of a joint venture, what roles would a manager be expected to play for certain types of task? To describe one's job responsibilities does not mean the same thing as to identify what roles should

fall into the categories of the responsibility. This may happen in an organisation of homogenous culture and even more so in a joint venture that accommodates people from different cultures with different cognitive schemas.

Theories in social cognition and cross-cultural psychology suggest that categories are composed of a core meaning, which consists of prototypes (best examples or focal points) of the category and is surrounded by other category members of decreasing similarity to the core meaning (Liu, 1993). As social and cultural differences influence the contents and use of people's schemas, the particular prototype that is chosen for a given situation may or may not be the same in all cultures, and is corresponding to social conformity, established gradually through socialisation (Forgas, 1985; Fiske and Taylor, 1991; Segal, Dasen, Berry and Poortinga, 1990).

It is hypothesised, therefore, that managers from different cultures in a joint venture may or may not have the same frames of reference (cognitive schemas) that allow them to predict the same prototypes of categories that accommodate certain management responsibilities. If their frames of reference are so close as to allow them to categorise role incumbents on the basis of identical prototypes of certain responsibilities, this can lead to a fit of frames of reference that entails a match of role expectations. On the contrary, if their frames of reference are so different that different categorisation of role incumbents ensues on the basis of different prototypes of certain responsibilities, this can lead to a misfit of frames of reference that causes a mismatch of role expectations. Mismatches of role expectations without adequate and timely communication can lead to incompatible management behaviour between the two partners and faulty attributions about each other, hence resulting in conflicts and mistrust.

5.5.2 The data

The data discussed in this section were based on the semi-structured interviews conducted with five dyads from five SBJVs in China in September and October 1994. Each dyad consisted of one British and one Chinese manager who were both directly

involved in the management at the operational level in the same joint venture. Their job titles included chairman of the board, general manager, deputy general manger, chief engineer and project manager. The data in this section was based on responses to the questions on managerial roles. The scale items in the questionnaire have been adapted from Nyaw (1993) with modification and are shown together with responses in Table 5.41.

5.5.3 The results

Table 5.41 shows that on most occasions the perceptions of role incumbents in association with the roles in a joint venture do not match between the dyadic interviewees in the same venture. In Case 1 the British and Chinese interviewees only share the same perception of the role incumbents with regard to arbitrating in conflicts and liaising with financial institutions, customers and suppliers (items 8, 16, 17 and 18). A major difference in perceptions seems to appear in the role division between the general manager and the deputy general manager. Meanwhile it seems that the Chinese interviewee sees a wider scope of roles of the department managers than does the British interviewee.

Case 2 shows a different situation, where the British and Chinese interviewees share the same perception of the role incumbents with regard to developing long-term and short-term objectives (items 1 and 2), assess divisional managers' performance (item 9), and to plan, implement and control the overall development of the venture (item 20). However, the Chinese interviewee sees many more roles being taken collectively at the board level than the British interviewee. The British interviewee sees the general manager being responsible for a few roles that in the Chinese interviewee's perception are taken at the board.

Table 5.41 Incumbents of managerial roles as perceived by dyadic British and Chinese interviewees

Main managerial roles in the joint venture	Case 1		Case 2		Case 3		Case 4		Case 5	
	Chinese	British	Chinese	British	Chinese	British	Chinese	British	Chinese	British
1. to develop the joint venture's long-term objectives;	**GM**, DGM	**GM**	**GM**	**GM**	CEng	GM, DGM	GM, DGM	CM	GM, **Brd**	**Brd**
2. to develop the joint venture's short-term objectives;	DptM	GM, DGM	**GM**	**GM**	**CEng**	GM, DGM, **CEng**	**GM**, DGM	**GM**	**GM**, Brd	**GM**
3. to formulate the strategy to achieve the joint venture's objectives;	DptM	GM, DGM	GM	Drtr	**CEng**	GM, DGM, SlsM, **CEng**	**GM**	**GM**	Brd	GM, OpM
4. to supervise the implementation of the strategic plan;	GM, **DGM**	**DGM**, LM	Brd	GM	TchDpt	N/A	**GM**	**GM**	**GM**	**GM**, OpM
5. to appoint shop floor managers;	GM, DGM	OpM, Brd	Brd	FctryM	CM, VCM	N/A	**GM**	**GM**	GM, Brd	N/A
6. to appoint divisional managers;	GM, DGM	OpM, Brd	Brd	GM	CM, VCM	N/A	**GM**	**GM**	GM, Brd	BrtPrt
7. to readjust the organisation structure to meet operational needs;	GM, **DGM**	**DGM**, Brd	Brd	GM	CM, VCM	GM	Brd	GM	**GM**	**GM**, OpM
8. to arbitrate in conflicts between departments or personnel;	**DGM**	**DGM**	FctryM	GM	CM, VCM	GM, DGM	**GM**	**GM**	**GM, OpM** DptM	**GM, OpM**
9. to assess divisional managers' performance;	GM, **DGM**	**DGM**	**GM**	**GM**	N/A	DGM	**GM**	**GM**	GM	GM, OpM
10. to assess shop floor managers' performance;	DptM	DGM	GM	FctryM	N/A	CEng	**GM**	**GM**	GM	N/A
11. to assess non-managerial staff's performance;	DptM	LM	FctryM	LM	N/A	OpM	**GM**	**GM**, DptM	**GM**, DpM	**GM**, OpM
12. to plan the major financial plan;	GM	FncDpt	GM	Drtr	FncM	GM	**GM**	**GM**, FncM (BrtPrt)	FncM, GM, Brd	GM, OpM, FncM
13. to liaise with the government;	**DGM**	**DGM**, CEng	CM	GM, BrtPrt, ChPrt	ChPrt	DGM	DGM	VCM	**GM, Adm**	**GM, Adm**
14. to liaise with the Chinese parent companies;	N/A	DGM	CM	N/A	CM	GM, DGM	TrnsItr	VCM	**GM**	**GM**
15. to liaise with the British parent companies;	**GM**, DGM	**GM**	CM	GM	CM, Dpts	GM, DGM	**GM**	**GM**	**OpM**, GM	**OpM**
16. to liaise with financial institutions;	**FncDpt**	**FncDpt**	ChfAct	N/A	FncDpt	GM, FncM	FncDpt	N/A	GncM	FncM
17. to liaise with customers;	**SlsDpt, BnsDpt**	**SlsDpt, BnsDpt**	DvM, SlsP	GM, SlsDpt	MktDpt	GM, SlsM	SlsDpt	GM, SlsM	**GM, OpM**	**GM, OpM**
18. to liaise with suppliers	**PchDpt**	**PchDpt**	SlsDpt	FctryM	PchDpt	GM, OpM CEng	N/A	GM, OpM	**OpM**, Adm, DptM	GM, **OpM**
19. to monitor the establishment of an effective control system;	GM	Brd	Brd	GM, FctryM	CM, VCM	GM, FncM	Brd	GM	Brd	QltM
20. to plan, implement and control the overall development of the JV.	GM	Brd	**Brd**	**Drtr**	CM, VCM	GM, DGM	Brd	GM	**GM**, Brd	**GM**

Table 5.41 Incumbents of managerial roles as perceived by dyadic British and Chinese interviewees (continued)

Job title coding:

Adm = Administration/GM office	LM = Line manager
BnsDpt = Business departments	GM = General manager
Brd = Board	FncM = Financial manager
BrtPrt = British parent	MktDpt = Marketing department
CEng = Chief engineer	N/A = Not applicable
ChfAct = Chief accountant	OpM = Operation manager
ChPrt = Chinese parent	PchDpt = Purchasing department
CM = Chairman	QltM = Quality control manager
Dpts = Departments	SlsM = Sales manager
DptM = Department manager	SlsDpt = Sales department
DGM = Deputy general manager	PchDpt = Purchase department
Drtr = Directors	SlsP = Sales people
DvM = Divisional manager	TchDpt = Technical department
FctryM = Factory manager	VCM = Vice Chairman
FncDpt = Financial department	Trnslt = Translator/secretary

In Case 3 the perception of the Chinese interviewee differs greatly from the British interviewee. It appears that in the Chinese interviewee's perception none of the roles are taken by the general manager. In addition, the deputy general manager takes only one role (item 5) in the Chinese interviewee's perception. In the British interviewee's perception, however, the deputy general manager shares most of the roles with the general manager.

In case 4 and case 5 the British and Chinese seem to perceive the same incumbents in a number of managerial roles. It is observed from the interview that in these two cases the management system of the joint ventures is simpler than the first three cases. For instance, in both cases there is a typical "dominant" management. In case 4 the British general manager took the major control of daily operation. Although the Chinese chairman was kept informed about major decisions in the daily management,

he was not directly involved in the management of the business except participating in meetings with other directors. In case 5 the Chinese general manager took the major control of daily operation, while the British manager was mainly responsible for technological jobs and sales.

5.5.4 Discussion

The results from the exploratory analyses of the managerial role expectations have provided an example from a different perspective; namely, the dyadic British and Chinese managers have different definitions about the perceived job breadth in connection with the roles in the joint ventures. It is therefore suggested that in business practices in cross-cultural settings, one must be aware of the potential mis-match of frames of reference and schema in inter-personal communication. Such mis-match may result in a situation in which one encodes a message and expects the other to decode the message in the same way, while the receiver decodes the message in the way that is different from the sender but the receiver assumes it the same. This situation can be better viewed by the concepts of isomorphism and equivalence.

Isomorphism. Concepts and prototypes have their own cultural origin. In terms of the basic content and the structure of categories, some instances may be representative or typical of a category in one language, but other instances may be representative or typical of the same category in another language (Liu, 1993). In the case of SBJVs, for instance, the contents of roles are described by terms expressed in English and Chinese. These terms are frequently employed in the daily communication of inter-personal managerial behaviour. It can be posited that the isomorphic equivalency of meaning in many terms is used as a means of conveying message (through translation in most cases), but there may be covert divergence of focal points from different conceptual origins. It is this covert divergence of conceptual ancestry that may contribute to the misfit of frames of reference.

This situation can be conceptualised by the term "isomorphism", by which is meant an assumption of categorical equivalency that is made upon the perceived equivalency of

denotative meaning in a semantic sense across languages, but is not warranted with adequate equivalency of perception of connotative meaning in an etymological sense. A related type of isomorphism is a perceived pseudo-equivalency of phenomena based on self-reference criteria. This may happen in both interpersonal communication of management and research processes.

In the management process, isomorphism may mislead people and result in establishment of inappropriate frames of reference. The frames can appear to fit superficially, but are unable to match sufficiently well to permit understanding with accuracy and communication with subtlety. In cross-cultural management, isomorphism may undermine the validity and reliability in survey instrumentation and measurement.

For instance, a Chinese equivalent can be found for the word "strategy", and it can be assumed that, by means of "de-centring" (Brislin, 1970), the word would remain as "translatable". However, the British and Chinese may have different focal points in their conceptualisation. The Chinese concept of strategy is known to be rooted in Sun Tzu's philosophy of achieving triumph through tactical positioning and averting destructive conflicts. The Western concept may centre on competition and control. Although both have overlapping contents of denotative meanings, there is still a divergence of some focal points that result from their different origins. Inadequacy in perceiving connotative meanings of the term "strategy" in its etymological sense may hinder or mislead the understanding in cross-cultural managerial interactions.

Of particular relevance in this context is the concept of *construct equivalence*, which can be extended in connection with discussions on cross-cultural behavioural expectations and isomorphism. Construct equivalence is comprised of functional equivalence, conceptual equivalence and category equivalence. For instance, the issue of construct equivalence in role expectations in cross-cultural management can be examined in three aspects.

First, it is important to pursue an adequate functional equivalence by assessing whether a given concept or behaviour serves the same function from home country to host country. Second, it is important to pursue an adequate conceptual equivalence by assessing whether the same concepts or behaviours occur, and whether the way in which they are expressed is similar in both home country and host country. Third, it is important to achieve an adequate degree of category equivalence by assessing whether the same classification scheme of objects can be used across home and host countries. However, attention should be drawn to the potential risk of falling into the trap of isomorphism. Role perceptions can be influenced by the achieved equivalence in the two-way cognitive processes between the perceived and the perceiver.

The issue of construct equivalence also bears importance in other management practices. On the basis of the theories in cross-cultural research and the findings from the present study, it can be argued that when working with people from other cultures, managers must be aware of the potential danger of inequivalence of concepts used in communication. Typically one tends to use the frame of references and schema developed in one's own culture and work environment. When working with managers from other cultures, the frame of references and schema may not match, which can create blockage in communication and miss-understanding.

5.5.5 Summary

The analysis in this section revealed mismatches in managerial role expectations between British and Chinese managers in the same joint venture. The mismatch in role expectations may be explained by the misfit of frames of references, which may also be associated with the effects of isomorphism and degree of construct equivalence. It is not clear at this stage whether the differences in perceptions are mainly associated with cultural or individual nature, because role schemas may be a function of both cultural and individual factors.

The results suggest that on most occasions the perceptions of association of management responsibilities with job titles do not match between a dyad. This implies

that given a set of explicitly defined and mutually exclusive roles, the expectation of who should play what roles differs greatly between the British and Chinese managers who are working together in the same joint venture. A noticeable situation is that where the management is dominated by either British or Chinese, there tends to be more matched role perceptions.

The characteristics of perceptions vary in each case. Given the differences in the identities of the dyadic interviewees and the varying organisational structure in each joint venture, at the present stage it is too early to conclude about whether the differences in role perceptions are associated with cultural or individual differences. It can be argued that, given the importance of organisational and personal factors that affect role perceptions (e.g., Shenkar and Zeira, 1992), examination of role perceptions from a social cognition perspective in cross-cultural context can reveal important insights into the roots of role conflict and role ambiguity in international joint ventures.

The investigation on role expectations is qualitative and exploratory in nature. As Taylor and Bogdan (1984) argue that in terms of the "truth" of the finding, it is not the truth *per se* but perspectives that a research should be interested in. The research is trying to obtain the interviewee's attitudes and interpretations, therefore "rationalisations, fabrication or exaggerations are quite as valuable as objective descriptions as long as these reactions be properly identified and classified" (Shaw 1966). Hence attention is given to the issues *de facto* and perspective taken by the interviewee rather than the truth of their opinion *per se*. The present qualitative approach may act as a source for hypotheses to be tested in the future research (Bryman 1988). On the basis of the findings from this exploratory investigation, propositions of the concepts of *isomorphism* developed by the author (Cui-Chi, 1995) and *equivalence* extended from the literature are discussed in their methodological and practical implications in the next chapter.

5.6 Conclusion

In this chapter empirical data analyses were reported in detail in regard to the key research issues of inter-personal trust, styles of handling inter-personal conflict, managerial competency and managerial role expectations in the context of SBJVs. The testing of the hypotheses provided empirical evidence that bears important implications for cross-cultural equivalence of the measure instruments and the key issues under the present study. The comparative analyses revealed differences as well as similarities between the British and Chinese managers in regard to the above key issues. To give an overview of the results, the hypotheses and the decisions on the testing results are summarised in Table 5.42.

The results from evaluation of the measurement instruments of trust (CTI) and styles of handling conflict (ROCI-II) have provided new empirical evidence to support the warning that using a measure instrument generated in one culture for research in another culture can lead to biased results if the instrument is not tested for its cross-cultural equivalence. As this chapter has revealed, the original scales of the CTI and ROCI-II instruments generated in the American culture were not applicable to the British and Chinese cultures. Statistical analyses by EFA and CFA assisted in generating a set of measure scales from within each of the original measure instruments. These respecified scales were tested by the CAF and were proven to be valid with cross-cultural equivalence based on the sample data. The respecified and validated scales have provided useful measures as tentative instruments for the present research, although it would be necessary to cross-validate the revised measure instruments with new data of different samples in the future research.

The findings from the comparative analyses in this chapter have provided important information for the understanding of the behavioural characteristics of British and Chinese managers in their working relations in SBJVs. The tests of hypotheses revealed significant differences and similarities with regard to the issues of the conditions of inter-personal trust, the styles of handling inter-personal conflict and managerial competency between the British and Chinese managers. One of the

Table 5.42 Summary of the hypothesis tests

Key issue		Hypothesis	Test	Decision
Conditions of inter-personal trust	H1:	In a British organisation the conditions that lead to inter-personal trust can be measured by the ten latent variables (factors): availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, and need for trust, as measured by the Conditions of Trust Inventory (CTI).	CFA	Rejection (Sig. level .05)
	H2:	In a Chinese organisation the conditions that lead to inter-personal trust can be measured by the ten latent variables (factors): availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, and need for trust, as measured by the Conditions of Trust Inventory (CTI).	CFA	Rejection (Sig. level .05)
	H3	There exists an equal number of factors as measured by the CTI instrument that are psychometricaly equivalent across British and Chinese managers in measuring the conditions and the overall level of inter-personal trust.	CFA	Non-rejection (with modified 7-factor model) (Sig. level .05)
	H4	There exist an equal number of factors as measured by the CTI instrument that explain the level of inter-personal trust in the same way for both British and Chinese managers.	SEM	Non-rejection (with modified 7- factor model) (Sig. level .05)
	H5	There exists a set of factors as measured by the CTI instrument that have impacts on the level of inter-personal trust for both British and Chinese managers in SBJVs.	*t* test	Rejection for different factors. See Table 5.24.
	H6	There is no difference between the British and Chinese managers in a SBJV with regard to the level of trust in each other and the degree of the conditions of trust perceived on each other.	*t* test	Rejection except "availability", "openness" (Sig. level .05)
	H7	There is no difference between the level and the conditions of inter-personal trust as perceived by the British manager on the British colleague in a British organisation, and those as perceived by the British manager on the Chinese counterpart in a SBJV.	*t* test	Rejection except "availability", "consistency", "promise fulfilment", "overall trust" (Sig. level .05)
	H8	There is no difference between the level and the conditions of inter-personal trust as perceived by the Chinese manager on the Chinese colleague in a Chinese organisation, and those as perceived by the Chinese manager on the British counterpart in a SBJV.	*t* test	Rejection (Sig. level .05)

Table 5.42 Summary of the hypothesis tests (continued)

Key issue	Hypothesis		Test	Decision
Styles of handling inter-personal conflict	H9	In a British organisation the use of styles of handling inter-personal conflict can be measured by the five factors as measured by the ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising.	CFA	Non-rejection (with modified scales) (Sig. level .05)
	H10	In a Chinese organisation the use of styles of handling inter-personal conflict can be measured by the five factors as measured by the ROCI-II instrument: integrating, obliging, dominating, avoiding and compromising.	CFA	Non-rejection (with modified scales) (Sig. level .05)
	H11	There exist an equal number of factors as measured by the ROCI-II instrument with construct equivalence across British and Chinese managers in measuring the styles of handling inter-personal conflict.	CFA	Non-rejection (with modified scales) (Sig. level .05)
	H12	With regard to the styles of handling inter-personal conflict, there is no difference between British managers in British organisations in the UK and Chinese managers in Chinese organisations in China.	*t* test	Rejection, except "obliging", "dominating" (Sig. level .05)
	H13	With regard to the styles of handling inter-personal conflict, there is no difference between British and Chinese managers in SBJVs.	*t* test	Rejection, except "dominating" (Sig. level .05)
	H14	With regard to the styles of handling inter-personal conflict, there is no difference between British managers who are working with British colleagues in the British organisations in the UK and those who are working with Chinese counterparts in SBJVs.	*t* test	Rejection (Sig. level .05)
	H15	With regard to the styles of handling inter-personal conflict, there is no difference between Chinese managers who are working with Chinese colleagues in the Chinese organisations in China and those who are working with British counterparts in SBJVs.	*t* test	Rejection, except "integrating", "avoiding" (Sig. level .05)
Managerial competency	H16	There is no difference in perceived managerial competency as reflected in the twenty-one items of characteristics between British and Chinese managers as counterparts in SBJVs.	*t* test	Rejection, except items 1-3, 13, 16-21. (Sig. level .01)

important findings is that the change of the organisational context and the counterpart in inter-personal interaction can cause alteration in behavioural patterns, for instance, in styles of dealing with inter-personal conflict. These findings give valuable insights into these critically important issues that cannot be tapped by the managers themselves and were not available in previously received studies. Examining these issues from a cross-cultural perspective, the analyses in this research provide unique, detailed information at a "micro" level in the context of inter-personal interactions in SBJVs.

Although the issues of managerial role expectation was addressed in a qualitative, exploratory manner, the findings gained through this approach have uncovered a critically important area in the management of international joint ventures. The empirical findings of mis-match of the role expectations between the British and Chinese managers give rise to the new important issues of isomorphism and construct equivalence in the management practice as well as research in the cross-cultural context. Further research is needed to investigate these issues in greater detail.

Overall, with these findings the present research has made important contribution to the body of the knowledge in cross-cultural research in the area of international joint venture and comparative management studies. For the sake of clarity, theoretical implications from the findings were discussed following the data analyses in each section. The managerial implications based on the test results will be discussed in the light of the theoretical framework in the next chapter.

CHAPTER 6 MANAGERIAL IMPLICATIONS

6.1 Introduction

The previous chapter described in detail the data analyses with regard to the key research issues of the conditions of inter-personal trust, the styles of handling inter-personal conflict, the perceived managerial competency and role expectations in SBJVs. The theoretical implications of the findings were discussed in relevant sub-sections in the previous chapter. This chapter discusses their managerial implications for SBJVs.

The implications discussed in this chapter are not meant to generalise the research findings to an extent of a set of "universal truths", but to add to the understanding by academics and business executives and provide some practical pointers for improved approaches to successful SBJVs. In this sense, the potential value in the discussion is not in providing the business practitioners with "what to do", but a valid foundation and directions for them to search for "the best thing to do" in their own specific context[1].

In section 6.2 the implications of equivalence are discussed in the context of cross-cultural managerial communication. In the following sections the implications are discussed in the light of the findings in regard to the conditions of inter-personal trust (sections 6.3), the styles of handling inter-personal conflict (section 6.4), and the perceived managerial competency (section 6.5). Section 6.6 provides a conclusion to the chapter.

[1] A full discussion aimed at providing guidelines for practitioners will be published in a separate report which, as agreed with the participants of the survey, will be circulated to them and other business executives with interests in SBJVs.

6.2 Equivalence in cross-cultural managerial communication

While the importance of equivalence has been widely acknowledged in academic (especially cross-cultural) research, it is often unnoticed in management practice. From an IJV perspective, the issue of cross-cultural equivalence in management communication is particularly relevant and critically important. When managers from different nations and different cultures co-work in a joint venture, they have to cope with the challenge that requires them to handle communication through a translator, and read the non-verbal, non-written signs of behaviour (i.e., the "silent language") and interpret them with their own frame of reference that may not be compatible with others. They are facing new (or possibly unknown) norms of behaviour in inter-personal interaction, new (or possibly hidden) agenda of the counterpart, and new (or possibly ambiguous) frames of reference in dealing with working relationships with each other. Very often they are perturbed about questions like "what exactly does that mean?" or "does (s)he really understand what I mean?"

The findings from the validation of the two research instruments (CTI and ROCI-II) bear some practical implications in this context. The measurement scales for CTI and ROCI-II were originally generated and validated in the American culture. The tests of the two measuring instruments in the present research have provided evidence that these America-generated scales, if used without modification, do not possess cross-cultural equivalence with the British and Chinese. The implication here is that when some abstract concepts (i.e., latent constructs) are used in communication in IJVs, such as "integrity" or "competence" in the present case, ambiguity and mis-match in understanding the *intended* meaning may exist between the people involved in the communication.

When working in a SBJV, for instance, the British manager may use the professional terms, concepts or even jargon that may not be familiar to the Chinese partner. Similarly, the British managers may find some terms and concepts used by the Chinese partner difficult to understand because they do not exist in the UK. Even worse is the situation in which both partners think they are exchanging ideas by referring to the

same concept, but in fact what one is actually referring is not the same as what the other is interpreting. As noted in the previous chapter, one of the measurement items for the concept of competence stated as "he/she does things competently". It has appeared that from the Chinese manager's perspective, that one "does things competently" means not only the ability to handle technical matters, but also, and most importantly, to handle relationships between people. Hence, for instance, without coincident understanding of the meaning of "competence" in a job specification for a manager, the British and Chinese partners may use different criteria by which the manager is to be selected and assessed. Such mis-understanding is not intended by either party, but the resultant confusion and conflicting behaviour may cause deterioration of the working relationship between the partners.

In an interview with a Chinese chief executive in a SBJV in Wuhan, he said that one of the lessons he learned was that if a job was within one's responsibility, one must "do it yourself" and minimise consulting the British manager. As he explained, the Chinese tend to consult others to show collaborative intention even when they know what to do; the British, however, looked down upon the Chinese because they thought the Chinese were incompetent. In this case the concept of co-operation and its related behavioural schemas are culturally different. Lack of an understanding of such differences leads to mis-understanding.

The exploratory analyses of the managerial role expectations have provided another example which shows that the dyadic British and Chinese managers had different definitions about the perceived job breadth in connection with the roles in the joint ventures. This situation exhibits "isomorphism" in the communication process, in which one makes an assumption of categorical equivalency that is made upon the perceived equivalency of denotative meaning in a semantic sense across languages, but is not warranted with adequate equivalency of perception of connotative meaning in an etymological sense. A related type of isomorphism is a perceived pseudo-equivalency of phenomena based on self-reference criteria. In the management process, isomorphism may mislead people and result in establishment of frames of

reference that appear to fit superficially, but are unable to match sufficiently well to permit *understanding* with accuracy and communication with subtlety.

A final issue that was not directly investigated in the present study but is related to the current discussion is translation in the management of SBJVs. It is appropriate to draw attention to the issue of translation because translation plays the key role in the cross-cultural communication process between the managers in IJVs. Theories in speech communication point out that translation is problematic in communication because of its loss of the original sociocultural context of the discourse (Banks and Banks, 1991). Many problems discussed above may be compounded by problems in translation, such as inaccuracies resulting from omission, cutting off the input with simultaneous talk, error, queuing or delaying response during heavy load periods and catching up during lulls, filtering or systematic omission of certain types of information, and less precise renderings of information than the original contained, to name a few (Gerver, 1976). Examination of various issues in translation is beyond the scope of the current discussion. However, this issue deserves special attention in connection with the issue of meaning coincidence and equivalence in cross-cultural management communication.

In general, the implications discussed above are related to construct equivalence. Construct equivalence is comprised of functional equivalence, conceptual equivalence and category equivalence (Douglas and Craig, 1983, p.137). First, it is important to pursue an adequate functional equivalence by assessing whether a given concept or behaviour serves the same function from home country to host country. Second, it is important to pursue an adequate conceptual equivalence by assessing whether the same concepts or behaviours occur, and whether the way in which they are expressed is similar in both home country and host country. Third, it is important to achieve an adequate degree of category equivalence by assessing whether the same classification scheme of objects can be used across home and host countries. However, attention should be drawn to the potential risk of falling into the trap of isomorphism.

The issue of construct equivalence bears importance in management practices. On the basis of the theories in cross-cultural research and the findings from the present study, it is suggested that when working with people from other cultures, managers must be aware of the potential danger of inequivalence of concepts used in communication. Typically, one tends to use the frame of references and schema developed in one's own culture and work environment. When working with managers from other cultures, the frame of references and schema may not match, which can create blockage in communication and mis-understanding.

The issue of equivalence is critical in effective communication in cross-national business management. It is particularly relevant to the use of latent constructs such as those in this research and involving behavioural concepts. They are intangible and difficult to measure with adequate equivalence across cultures and languages. The problems resulting from mis-understanding and mis-interpretation of such concepts may occur in inter-personal communication, performance appraisal, staff training, market research, etc. in IJVs . On the basis of the findings from the present research, it is suggested that:

1) When dealing with cross-cultural business relations, efforts must be made to ensure that what is understood and interpreted in the communication is that which was originally meant. Efforts must be made to cross-checking the meaning that has been translated from a different language. For instance, use more than one interpreters if possible in IJV meetings and negotiations, and cross-reference with two versions of translation for important written documents from different professional translators. For important issues, one should not only ask the counterpart to give specific explanation of the key issues under discussion, but also to tell the other person one's own understanding and interpretation of the issue. By this process any ambiguity and mis-understanding may be revealed and clarified before problems occur.

2) For staff performance appraisal in the IJVs, check whether the similar terms and concepts exist in the other language and culture, because the psychometric differences

between the Western managers and the local staff may lead to biased results. The questionnaire used in staff appraisal must not be simply based on the one that is directly copied from the Western scale inventories. They should be validated through appropriate scale development and back-translation, and the measurement scales must be validated through necessary analytical process (e.g., EFA and CFA).

3) When translating company brand, logo, labels, job titles, packaging design, and customer research instrument for use in a different country, the same validation process must be used to ensure the original meaning is not missed out, distorted or is culturally inappropriate.

4) When the Western (including British) IJV partners introduce their management systems into IJVs, care should be taken as to how the basic concepts would be comprehended by the local staff. In particular, Western managers must investigate not only whether similar managerial concepts and approaches already exist, but also whether they are described in different terms in the host country; also whether any new concepts would be comprehended in the local language with conceptual equivalence. Programmes which prepare managers to work in joint ventures should sensitise managers to these issues.

6.3 Building inter-personal trust in SBJVs

Trust plays a crucial role in the maintenance of working relationships for sustained effective co-ordinated action between IJV partners. Trust is activated and sustained by a multidimensional set of antecedent conditions (Butler, 1991; Mayer, Davis and Schoorman, 1995). Individuals from different cultures have identifiable behavioural characteristics that are conceptualised as the conditions (antecedents) of trust. It is important for the IJV managers to have a clear understanding of these antecedents in order to improve their working behaviour towards a higher level of mutual trust and more compatible working relationships. In the case of SBJVs, it is important that British and Chinese managers understand what part of their behavioural characteristics most significantly affect their counterparts' trust in them, and how their

behavioural characteristics that lead them to be trusted are perceived by their counterparts.

The analyses in the previous chapter have identified significant factors as antecedents of trust from the perspectives of British and Chinese managers involved in SBJVs. From the British manager's perspective, trust in the Chinese counterpart in a SBJV is directly affected by the Chinese counterpart's behavioural characteristics described as "integrity" and "availability". From the Chinese manager's perspective, trust in the British counterpart in a SBJV is directly affected by the British manager's behavioural characteristics described as "integrity", "competence" and "openness". In addition, the analyses have identified mean differences between British and Chinese managers in the perceived levels of overall trust and the seven factors identified in studies of trust as conditions of inter-personal trust. These findings bear important practical implications for improving mutual trust between British and Chinese managers in SBJVs. These implications are discussed in the following.

Significant factors of inter-personal trust in the SBJV context

One important factor that affects both British and Chinese managers' trust in each other in SBJVs is exhibition of "integrity" in their interaction. Integrity represents one's character of being honest and truthful towards others. This behavioural property is indicated by two perceived characteristics: "He/she always tells me the truth" and "He/she deals honestly with me". In other words, the combination of the two characteristics of telling the truth and being honest to others in inter-personal interaction is regarded as integrity that directly affects the extent to which one is trusted. The increase in these two dimensions is expected to increase the extent to which one is trusted by the counterpart. This implies that a British manager's trust in a Chinese manager in a SBJV very much depends on whether the Chinese manager is seen as adhering to the principle of always telling the truth and treating the British managers honestly. In the same manner, a Chinese manager's trust in a British manager depends much on whether the British manager exhibits that he/she always tells the truth and treats the Chinese manager honestly. It is essential for both British

and Chinese managers to understand this importance and demonstrate their integrity in their interaction in SBJVs. It can be expected that their mutual trust will be greatly enhanced if both parties make efforts to increase their integrity-related characteristics in their interactive behaviour in SBJVs.

A few points need to be considered in this regard. First, it may not always be easy for a British or Chinese manager to *be seen* as telling the partner the truth. Since the joint venture managers come from different parent companies, they have their own criteria (and constraints) regarding the extent to which one could release the information to the counterpart. There may be a mis-match in this expected extent that warrants what is regarded to be the truth and honesty in communication between the joint venture partners. It is therefore essential for the working partners to establish an understanding with regard to the "mutual insurance": what kinds of information should be exchanged, to what extent, on what basis of frequency and when. It is particularly important that the chief executives in the headquarters give their representative manager working directly with the joint venture counterpart the responsibility to be the first contact for important information. If the counterpart has managed to obtain information from sources beyond the site manager who is expected to give such information, the site manager is bound to be seen by the counterpart as not telling the truth and not treating the counterpart honestly, hence resulting in the counterpart's mis-trust in him. Success, especially in the early stages of a joint venture, requires both attitudes and processes to be right.

Furthermore, differences in cultures and managerial styles may cause mis-perception in regard to integrity. For instance, a British manager's individualistic style may lead a Chinese manager to think that the British manager is "doing things behind the scene". Similarly, the Chinese manager's cultural value of "saving face" may lead the Chinese manager to withhold some information for the purpose of saving face for the relevant parties. This may cause the British manager to suspect that the Chinese manager is not telling him the truth. Therefore, there is a need for British and Chinese managers to understand the differences in each other's culture and managerial styles, and make efforts to adjust their behavioural styles toward mutual adaptation. When

faced with cross-cultural interaction, some personal and managerial styles established in one's original culture should give way to required behavioural patterns which are *seen by the counterpart* as exhibition of integrity.

It sometimes happens that with the advantage of a local employee as the interpreter, the Chinese manager may tell the interpreter not to fully interpret his discussion with other local colleagues in a meeting, with an intention to avoid unnecessary misunderstanding or embarrassment and to save someone's face. However, the British manager may be able to sense that something else has been talked but he has not been fully told about it. The same may happen when the interpreter is directly responsible to the British manager and has to follow his instruction to only interpret part of the information to the Chinese manager. These situations are likely to cause mis-trust between the two partners and should be avoided. British and Chinese managers should bear in mind the crucial importance of their integrity being *seen* in their daily working behaviour with their counterparts. Sustained exhibition of integrity in the interaction with the counterpart is an essential prerequisite for achieving the counterpart's trust in a SBJV.

From the British manager's perspective, the Chinese manager's "availability" is also an influential factor that affects the British manager's trust in the Chinese manager in SBJVs. This behavioural property is indicated by the characteristics of "He/she is usually around when I need him/her" and "He/she is available when I need him/her". The important implication for the Chinese manager is that since working in a foreign environment can be stressful and fear of failure can be strong, the unfamiliar Chinese culture and the macro environment of China pose a certain degree of risk to the British manager. Meanwhile, the British manager is dependent on the Chinese counterpart for local knowledge. Hence, the feeling of uncertainty about working in the SBJV and dependency on the Chinese counterpart for local knowledge cause a British manager's concern on the Chinese manager's positive orientation and sufficient contact for communication, which directly affect the British manager's trust in the Chinese partner. It is therefore important for the Chinese manager to understand that making efforts to maintain frequent contact and communication as

needed by the British manager will be helpful in improving trust by the British manager. In addition, the Chinese manager's care and concern for the British manager will facilitate the British manager's confidence in the Chinese manager, which contributes positively to the British manager's trust in the Chinese manager in SBJVs.

Apart from the factor of integrity, the Chinese manager's trust in the British manager is dependent on competence and openness exhibited in the British manager's behaviour in the SBJV. Competence has a diverse range of meaning in different cultures. It is important for the British manager to realise that it is the kind of competence or ability as perceived by the Chinese counterpart that is critically important for winning the Chinese counterpart's trust. Specifically, professional skills in technical matters and general management issues are necessary but not sufficient in the eyes of the Chinese manager. Since the working context is in China, the sensitivity and practical skill in handling inter-personal relationships with the counterparts, employees and people outside the SBJV (such as government officers, Chinese parent company executives, suppliers and services agents) are highly valued by the Chinese and regarded as the integral component of managerial competence. It is a challenging but inevitable task for the British manager to understand and learn to handle the intricacy of "guanxi" (i.e., inter-personal relationships) in China. This requires the British manager to understand the Chinese psychology, cultural values and "rules of the game" in firm-government, firm-banks, firm-media, supplier-buyer, employer-employee, superior-subordinate and various other kinds of interactive relationships involved in SBJV activities in China. Conflict in cultural and ethical values may be unavoidable sometimes between the British and Chinese managers. It is essential for the British manager to know where to draw the fine line in the process of learning new components of competence in a new cultural environment. A flexible and diplomatic attitude with genuine interest in diversifying managerial competence with a local style can be expected to positively contribute to the Chinese manager's trust in the British manager.

From the Chinese manager's perspective, the British manager's openness is particularly influential in the Chinese manager's trust the British manager. This may

mainly be due to the popular image of "the Englishmen are reserved" as perceived by the Chinese. British managers need to be aware of this negative image held by the Chinese. "Openness" is indicated by the characteristics of "He/she tells me what he/she is thinking" and "He/she tells me what's on his/her mind". It is suggested that British managers need to use more informal styles and more personal communication with the Chinese counterpart. A certain extent of personal friendship or social relationship will be useful to bridge the cultural gap. British managers may need to "unpackage" themselves from the stringent "privacy" concept in their own culture and adapt to the Chinese manager's tendency to see each other's mind and share the thoughts and feelings that evolve from daily work in the SBJV. Given their connections with their own parent companies, it is important that both British and Chinese managers see each other as "travellers on the same boat" facing the turbulence of the SBJV development. Being open to each other will help to build mutual trust and pull together to make the SBJV a successful journey.

Differences in perceived levels of trust and factors of trust

Although not all of the seven factors were identified as significant in the present study, an understanding of how they are generally perceived by the British and Chinese managers can be useful for British and Chinese managers to improve their mutual understanding. To assist in understanding the differences, the statistical results of the mean differences in each of perceived conditions of trust and the overall level of trust are converted into the following graphs (Figures 6.1 - 6.3).

As can be seen in Figure 6.1, British and Chinese managers in SBJVs are perceived by each other at different levels of these factors except "availability" and "openness". On average, Chinese managers have more favourable perceptions of British managers than British managers have of Chinese managers. It is worth noting that Chinese managers appeared to have a higher level of trust in their British counterparts than British managers' level of trust in their Chinese counterparts. Nevertheless, British managers appear to have a positive perception of their Chinese counterparts on the

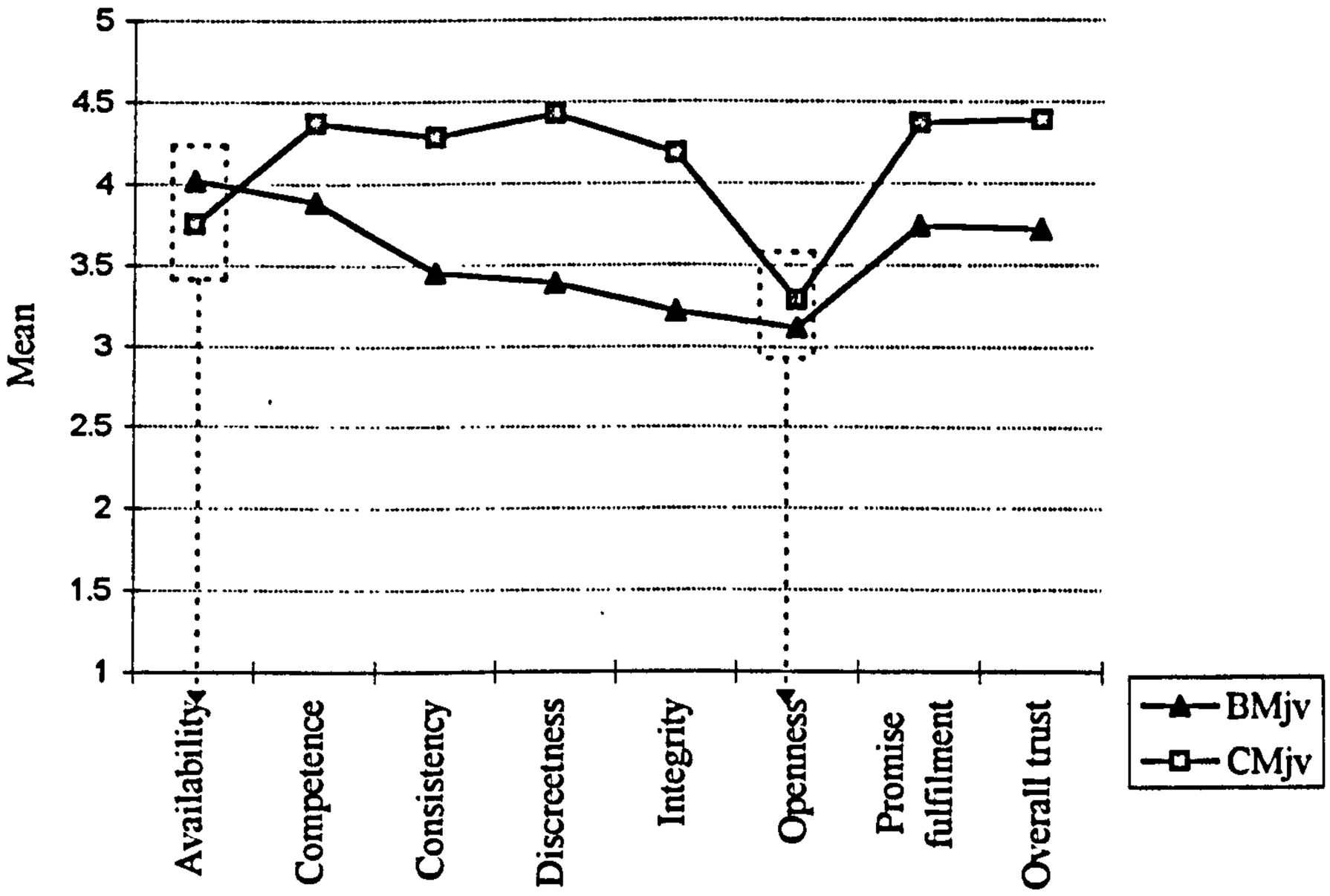

Figure 6.1 Mean differences in conditions of inter-personal trust (CTI) and overall trust between Group BMjv and Group CMjv
(Converted from Table 5.21. Scale keys: 1 = strongly disagree, .. 5 = strongly agree. Dotted-line frames indicate insignificant mean differences between the groups.)

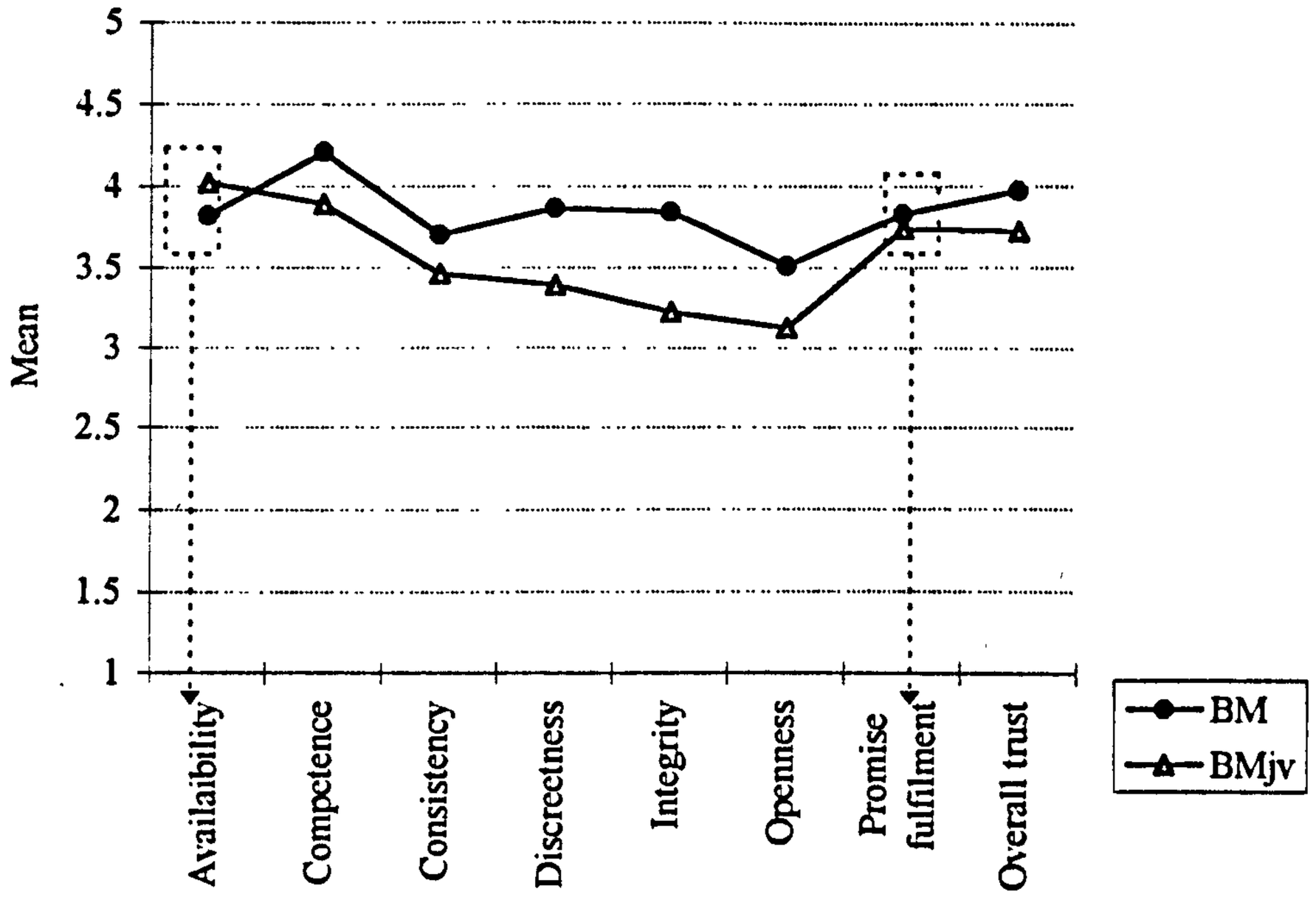

Figure 6.2 Mean differences in conditions of inter-personal trust (CTI) and overall trust between Group BM and Group BMjv
(Converted from Table 5.22. Scale keys: 1 = strongly disagree, .. 5 = strongly agree. Dotted-line frames indicate insignificant mean differences between the groups.)

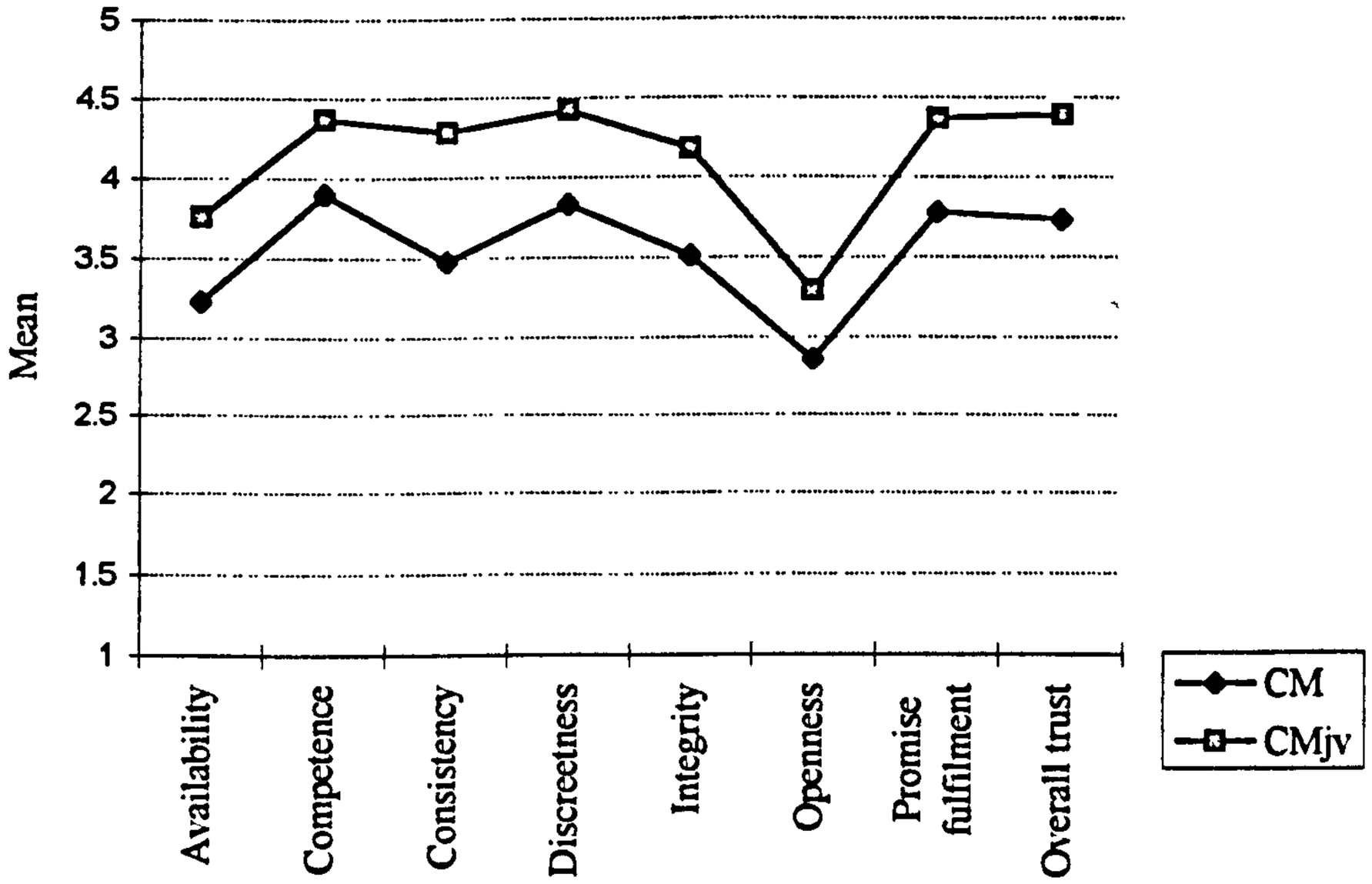

Figure 6.3 Mean differences in conditions of inter-personal trust (CTI) and overall trust between Group CM and Group CMjv
(Converted from Table 5.23. Scale keys: 1 = strongly disagree, .. 5 = strongly agree. All mean differences between the groups are significant.)

factors of the conditions of trust as well as the over all level of trust. In terms of the differences between these factors, British managers perceived Chinese managers at a relatively lower level on consistency, discreetness, integrity and openness than other characteristics. Chinese managers perceived British managers relatively lower in availability and openness than other factors.

It is suggested that British and Chinese managers in SBJVs need to be aware of these differences. British managers should realise their favourable position in the eyes of the Chinese managers, and make efforts to benefit from such position for long term effective co-operation. They may need to pay a particular attention to improving their openness in their interaction with the Chinese counterpart. As discussed earlier, the British manager's openness is particularly influential in the Chinese manager's trust of the British manager. British managers need to relax the stringent "privacy" concept in

their own culture and use more personal communication with the Chinese counterpart to share the thoughts and feelings that evolve from daily work in the SBJV.

For the Chinese managers, they need to improve their behavioural characteristics as reflected in these factors, especially in terms of consistency, discreetness, integrity and openness. In consideration of the impact of the Chinese manager's integrity on the British manager's trust in the Chinese manager, Chinese managers need to make efforts to exhibit that they are telling the truth and treating the British manager honestly. It is worth noting that this difference may be partly due to the cultural difference between the British and Chinese. As discussed in earlier chapters, the British culture and managers show a "straightforward" style. The Chinese managers, however, tend not to be straightforward because of the concept of maintaining face. In this sense, the characteristic of "telling the truth" as one dimension of the construct "integrity" many not be appreciable by the Chinese. Since this research has revealed that it is important for the British manager to trust the Chinese manager whose behaviour complies with the dimensions of "integrity", it is necessary and important for the Chinese managers to adapt themselves to the British partners in this regard in order to achieve interactive compatibility and effective co-operation in joint ventures. To achieve this, Chinese managers need to improve their understanding of the British culture and find out what inter-personal communication approaches would be most helpful to bring out the truth without making anyone to lose face.

It is interesting to notice that, as Figure 6.2 indicates, except for the two factors (availability and promise fulfilment) not exhibiting a insignificant difference, British managers generally perceived their British colleagues at home organisations more favourably than the Chinese counterparts in SBJVs. In contrast, Figure 6.3 shows that Chinese managers generally perceived the British counterparts in SBJVs more favourably than their Chinese colleagues at home organisations on the overall level of trust and the seven factors. This contrasting difference implies that British managers may find it more difficult to build trust in the Chinese counterparts in SBJVs than their own colleagues at home. On the contrary, the Chinese managers may find it easier to

build trust in their British counterparts in SBJVs than their colleagues at home organisations.

On the basis of these findings, a few points deserve special attention from British and Chinese managers involved in SBJVs. First, British managers need to be aware that on average their Chinese counterparts have more favourable perceptions of them than of their Chinese colleagues at home organisations in terms of British managers' availability, competence, consistency, discreetness, integrity, openness and promise fulfilment. As a result of these, at least partly, Chinese managers tend to have higher trust in their British counterparts than their Chinese colleagues. Therefore, British managers should value such a favourable position and be careful not to jeopardise this favourable image. In addition, British managers may need to convey their appreciation of the Chinese counterparts' trust in them in order to reinforce the Chinese counterparts' positive orientation towards them. Although British managers may feel less comfortable in working with the Chinese in SBJVs as compared with their British colleagues at home, they need to understand that perhaps what they can get may already reflect the Chinese counterparts' efforts, and they should not use their experience at home as a reference. This particularly requires British managers to understand how things work locally and why Chinese managers behave in certain ways. For instance, it may be the less developed infrastructure and changing macro-policies in China that have cultivated Chinese managers to handle business in situations of uncertainty and hence unconsciously exhibit the style of being less consistent in their behaviour.

Second, Chinese managers need to be aware of their less favourable image in the eyes of British managers in terms of their competence, consistency, discreetness, integrity, openness and overall trust. It is particularly important for Chinese managers to understand what criteria British managers hold for these characteristics. They should be aware that while they feel relatively easier to adapt to the British managers, the British managers feel the contrary. Therefore, the Chinese managers in SBJVs need to make efforts to expand their knowledge about the British culture and management philosophy either through training or self-learning. For instance, Chinese managers

should understand the importance of privacy and confidentiality in business and inter-personal communication. For Chinese managers, it may be acceptable that confidentiality may exist only between those who have close "guanxi" (personal ties). However, when working with British managers in SBJVs, they should understand the importance of discreetness in business relationships and exhibit respect to their British counterparts' need for keeping information of inter-personal communication in confidence as is deemed necessary.

Third, it may be suggested that both British and Chinese managers need to understand the importance of mutual adaptation, but with different focuses. For the British manager it may be more important to be prepared for working in certain constraints and pay more attention to practical reasons behind the Chinese managers' less satisfactory styles than suspecting their intentional reasons. For the Chinese manager it may be more important to understand the British managers' criteria for satisfactory behavioural characteristics such as these seven factors, and change the working habit for more compatible interaction with the British manager in SBJVs. It may be particularly important for Chinese managers to take the initiative in communication to make sure the British counterpart fully understands why things have to be done in the Chinese way if there is no other alternative.

6.4 Managing inter-personal conflict in SBJVs

As noted earlier, British managers tend to have a negative view of conflict. Open conflict between managers is regarded as something rather ungentlemanly (Barsoux and Lawrence, 1990, pp.114). The Chinese culture also reflects a tendency to avoid open conflict so that both sides in the interaction can save face. The data analyses on the styles of handling inter-personal conflict have revealed some characteristics of the British and Chinese managers. For convenience of demonstration, the statistical results are converted into graphics in Figures 6.4-6.7. A synthesised view of the differences in the five styles of handling inter-personal conflict is also reproduced in the integrative-distributive-dimension model in Figure 6.8 for comparison.

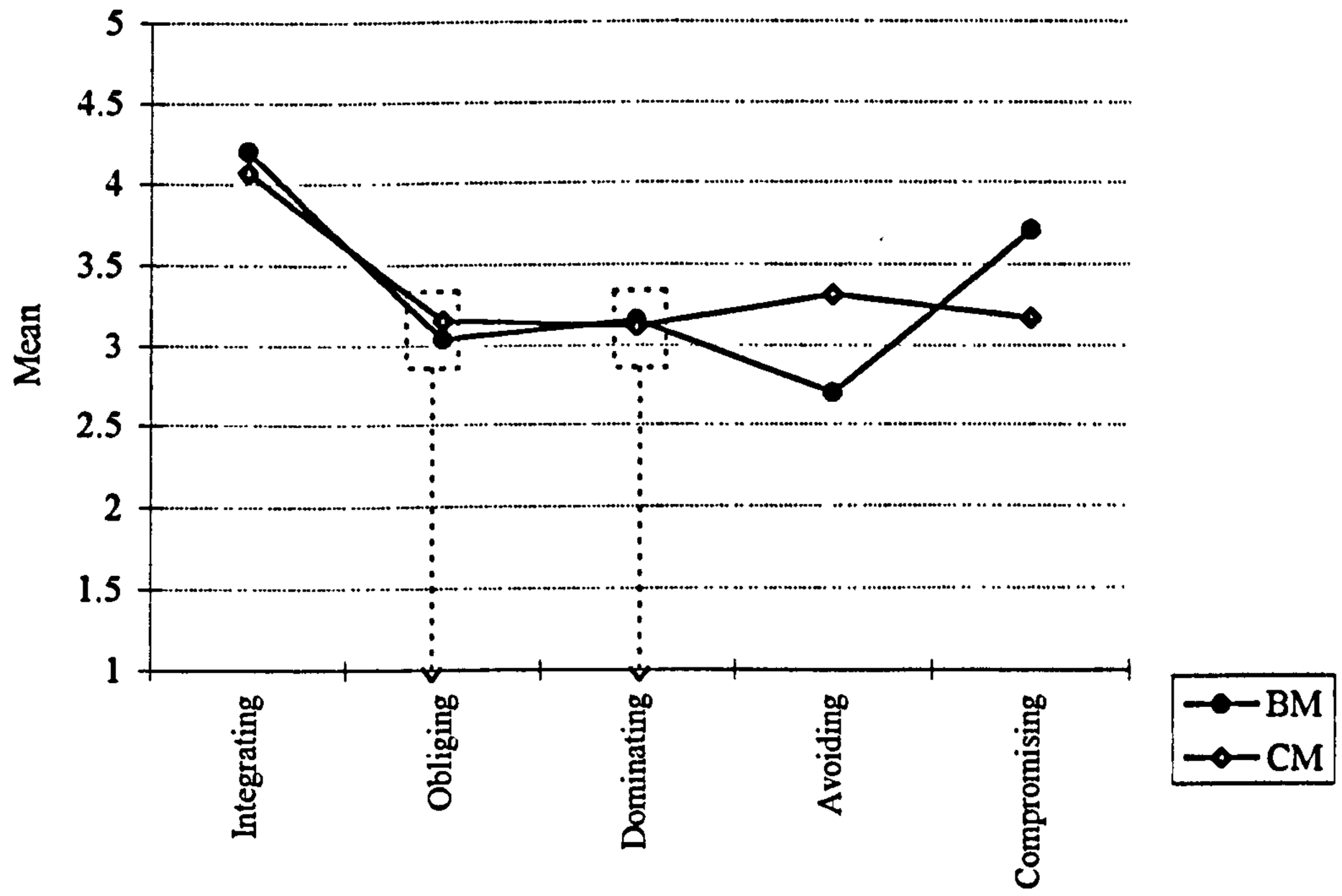

Figure 6.4 Mean differences in styles of handling inter-personal conflict (ROCI-II) between Group BM and Group CM

(Converted from Table 5.34. Scale keys: 1 = strongly disagree, .. 5 = strongly agree. Dotted-line frames indicate insignificant mean differences between the groups.)

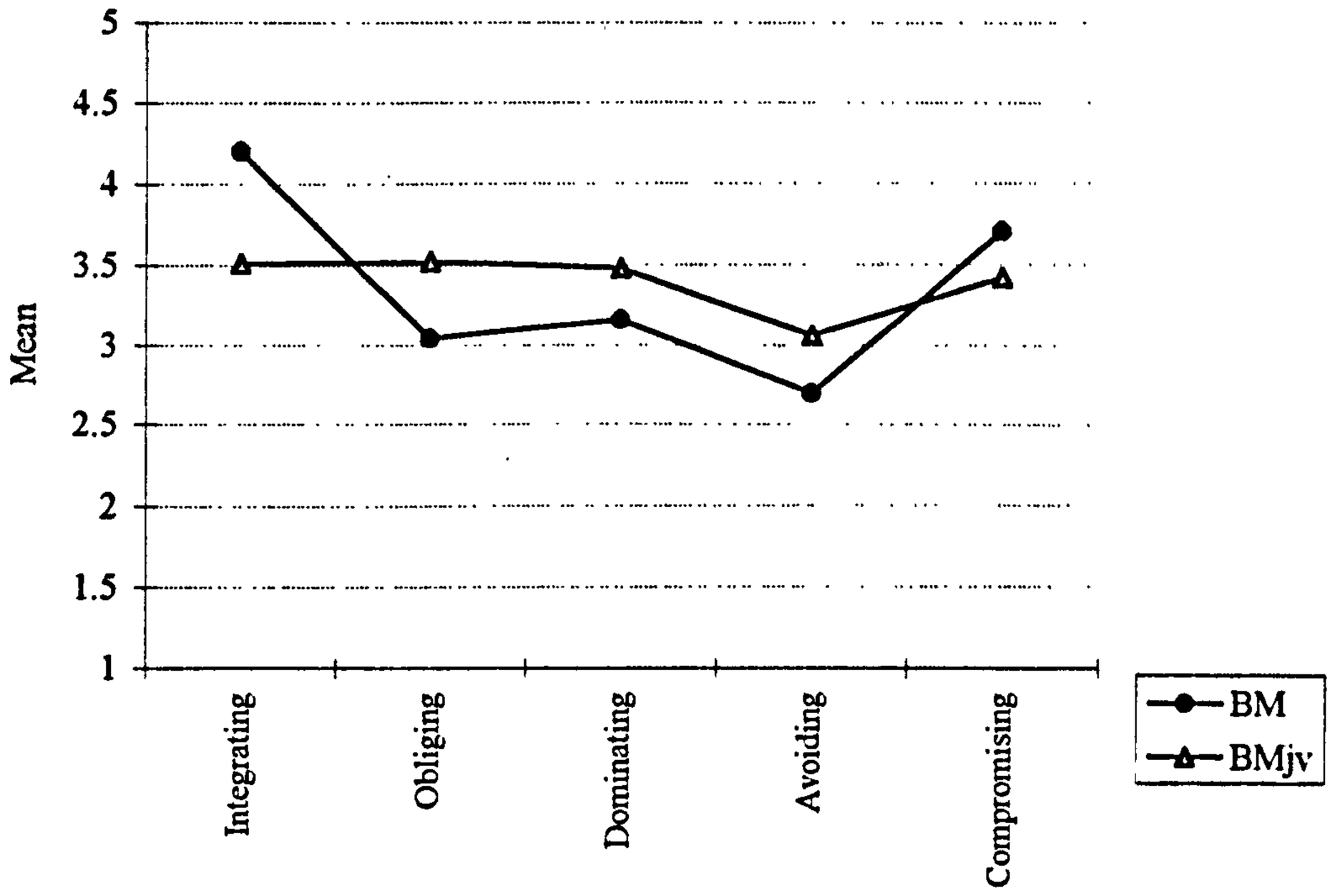

Figure 6.5 Mean differences in styles of handling inter-personal conflict (ROCI-II) between Group BM and Group BMjv

(Converted from Table 5.36. Scale keys: 1 = strongly disagree, .. 5 = strongly agree. All mean differences between the groups are significant.)

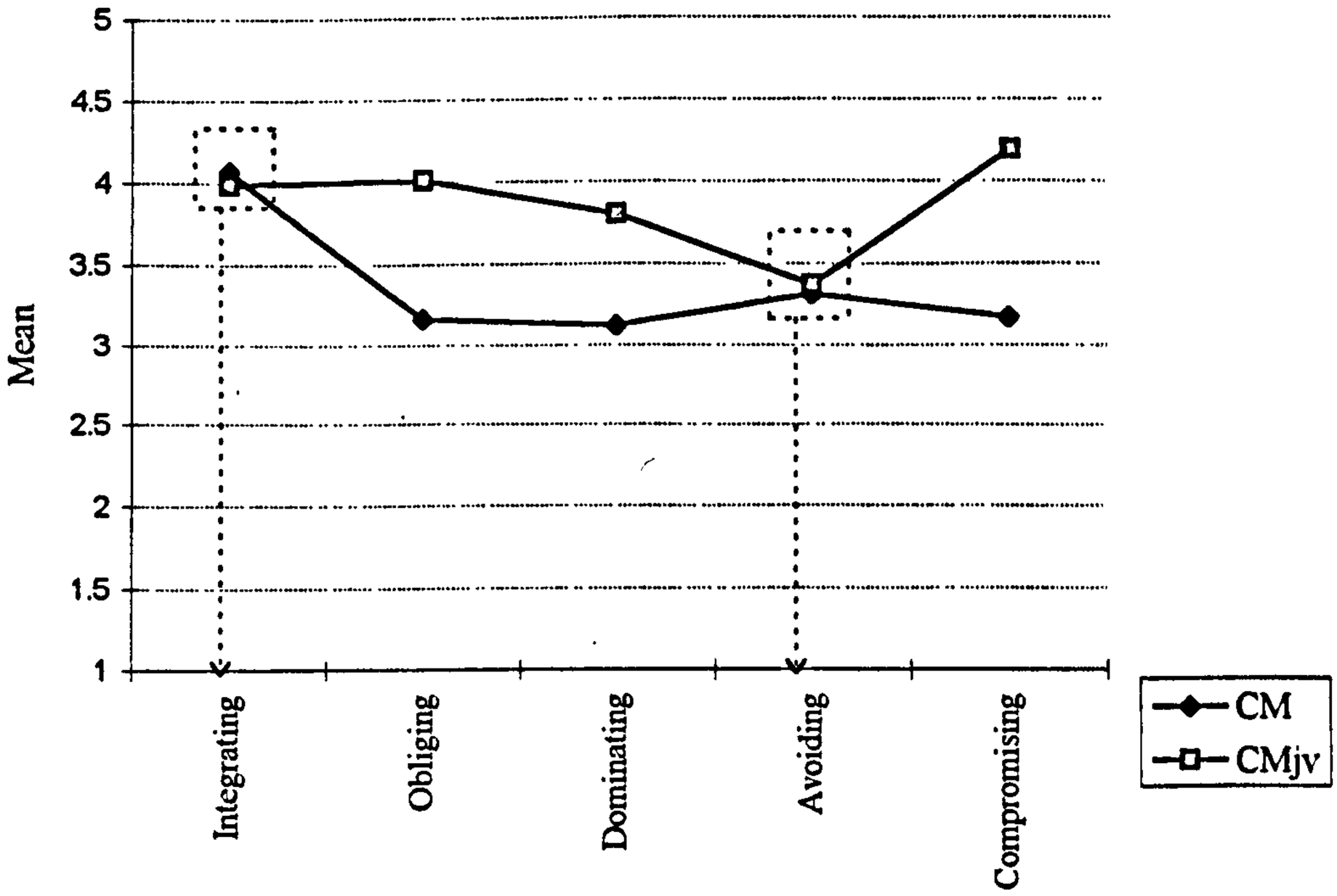

Figure 6.6 Mean differences in styles of handling inter-personal conflict (ROCI-II) between Group CM and Group CMjv
(Converted from Table 5.37. Scale keys: 1 = strongly disagree, .. 5 = strongly agree. Dotted-line frames indicate insignificant mean differences between the groups.)

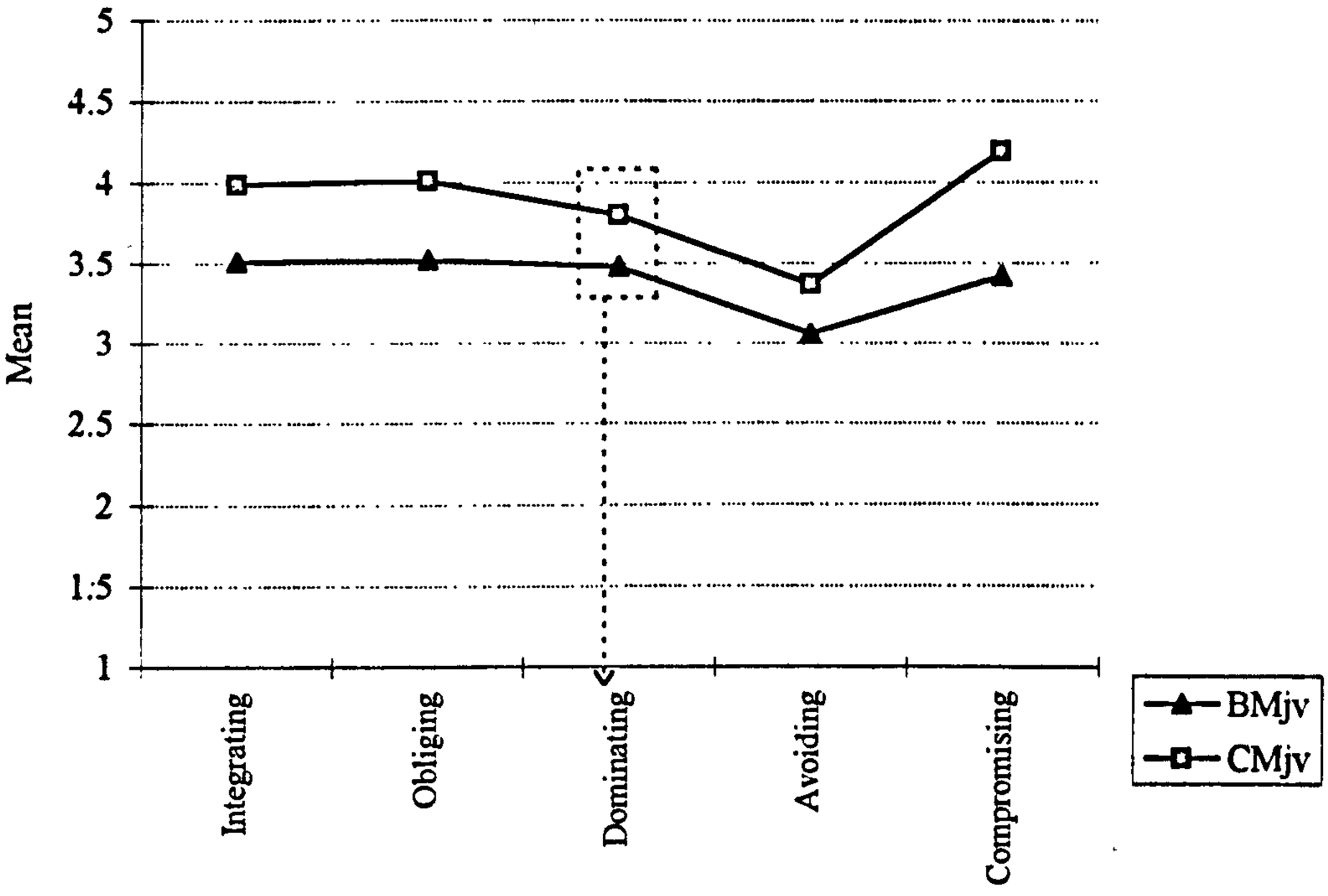

Figure 6.7 Mean differences in styles of handling inter-personal conflict (ROCI-II) between Group BMjv and Group CMjv
(Converted from Table 5.35. Scale keys: 1 = strongly disagree, .. 5 = strongly agree. The dotted-line frame indicates an insignificant mean difference between the groups.)

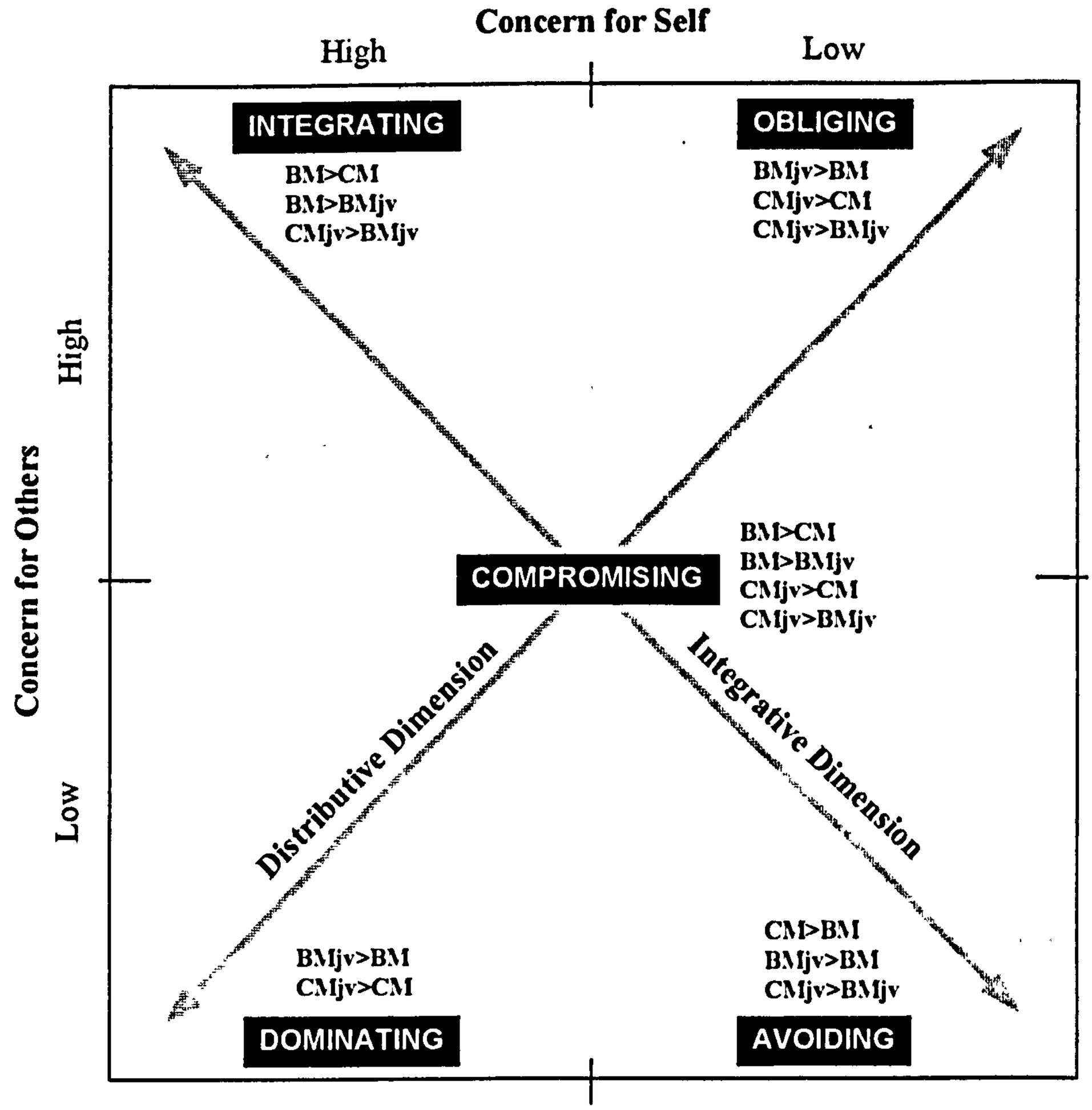

Figure 6.8 A synthesised view of differences in the five styles of handling inter-personal conflict between different groups
(Source: Adapted from Rahim and Blum, 1994, p.8.)

As the figures show, British and Chinese managers have their own styles of handling inter-personal conflict, and these styles also change to a certain extent in different contexts, i.e., home organisations versus SBJVs. Specifically, in view of handling conflict with their colleagues at home organisations, British and Chinese managers are different in their styles characterised by integrating, avoiding and compromising (see Figure 6.4). British managers appear more inclined to use integrating and compromising styles than Chinese managers, while Chinese managers appear more inclined to use an avoiding style than British managers.

However, British and Chinese managers need to be aware that these general differences and other reported differences from isolated comparisons should not be held as stereotypes of their styles in handling conflict because the behavioural characteristics in dealing with conflict are affected by the nature of the organisational context and the working counterpart with whom one is handling the conflict. As Figure 6.5 shows, when handling conflict not with their colleagues at home but with the Chinese counterpart in a SBJV, the British manager's tendency to use integrating and compromising styles becomes lower and the tendency to be obliging, dominating and avoiding becomes higher. Similarly, as can be seen in Figure 6.6, the Chinese manager's tendency to be obliging, dominating and compromising becomes higher when dealing conflict with the British counterpart in SBJVs, while the tendency to be integrating and avoiding remains unchanged. However, Figure 6.7 indicates that when comparing the styles of handling inter-personal conflict between the British and Chinese counterparts in SBJVs, British and Chinese managers appear to use different styles except "dominating". In general, Chinese managers appear to use a stronger level of integrating, obliging, avoiding and compromising styles than British managers. In relative terms both British and Chinese managers appear to use a lower level of avoiding style in comparison with other styles.

On the basis of these identified characteristics in handling inter-personal conflict by British and Chinese managers in different situations, some practical implications can be addressed for British and Chinese managers involved in SBJVs. British and Chinese managers involved in SBJVs should be aware of the differences and similarities in their styles of handling inter-personal conflict (a synthesised view of the major differences can be seen in Figure 6.8). Conflict may not be avoided or reduced, but it must be effectively managed. The management of conflict involves two important tasks: the diagnosis of and intervention in conflict (Rahim, 1985). A diagnosis of conflict helps to discover the underlying sources and nature of conflicts, which may not be what appears on the surface. Without a proper diagnosis, an intervention may lead to solve a wrong problem when one should have solved the

right problem[2]. Styles of handling conflict is one of the important measurements in the diagnosis of conflict (Rahim, 1985). British and Chinese managers should be aware of the general characteristics identified in the present study for adjusting their approaches to effective intervention in managing conflict in SBJVs.

Studies by behavioural scientists have shown that there are no hard rules about which style is more appropriate than the other in managing conflict functionally. It is suggested that in general, integrating and some extent of compromising styles may be appropriate for dealing with the strategic issues, while the remaining styles may be used to deal with tactical or day-to-day problems (Rahim, 1985). Managers from British and Chinese organisations may need to adjust their orientations and approaches in dealing with conflict with their counterparts in SBJVs. This is because not only their counterparts' styles are different from their colleagues at home, but more importantly the underlying sources and nature of the conflict may be different from those they experienced in their home organisations. It is important to understand that situational as well as cultural factors jointly affect one's styles of handling conflict. The present study has provided preliminary pointers for British and Chinese managers to identify in themselves and their counterparts' different styles in handling inter-personal conflict in SBJVs. It is important for both British and Chinese managers to draw appropriate implications from these characteristics in their own organisational context and search for the most appropriate approaches to effective management of conflict with their counterparts in SBJVs.

6.5 Meeting the demand for competence in managing SBJVs

Brewster, Lundmark and Holden's study (1993) has identified twenty-one features to represent the characteristic traits of a competent manager. .They found that in terms of the most important features for "a good manager", the British were most likely to identify flexibility, the stimulation of individual achievement and the creation of a climate of trust. In another study, Vertinsky, Tse, Wehrung and Lee (1990) have

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[2] This is called the *error of the third kind* in behavioural studies (see Mitroff and Featheringham, 1974, for detailed discussion).

found that in China, the traditional values such as ascribed status and loyalty are regarded as bases for identification of a good manager, and participative decision making in organisations is encouraged. They have also found that in large-size organisations, Chinese managers value clear and formal rules of action, well-specified lines of authority, and a high degree of control over employees, while in small and medium organisations emphasis is place on relationships through socialisation processes without resorting to formal structure and systems.

When the British and Chinese managers in the SBJVs were asked to rate their counterparts on Brewster, Lundmark and Holden's 21-item scale, significant differences were found in some of the features. For the convenience of observation, the results in Table 5.37 are reproduced in Table 6.1 and converted into a chart diagram in Figure 6.9. As noted in last chapter, the *t*-test was conducted at the level of .01 because the limited sample size compelled precaution to be taken in the analyses. Hence, although some of the bar chart appears visually much different, the differences are not statistically significant, which are marked by "*" at the numbers of the scale items.

As Table 6.1 and Figure 6.9 indicate, no significant differences existed between the British and Chinese managers in the mean scores of mutual perceptions on items 1- 3, 13, 16-21. The mean scores range between 1.44 to 2.89, which suggest that generally British and Chinese managers see each other as competent on these features. Specifically, they strongly confirmed their partner's strong dedication to work (item 21) and sense of humour (item 13). Both sides regarded their partners as being cautious in action (item 16), taking decisions with careful preparation (item 3), making sure plans and rules are followed (item 18), stimulating discussion among staff members (item 19), encouraging participative decision making (item 17), and accepting new ideas and being quick in making decisions. These features are generally consistent with the British and Chinese managerial styles and cultural characteristics summarised early. It implies that British and Chinese managers share some common features as described by these items.

Table 6.1 A summary of testing differences between Group BM_{jv} and Group CM_{jv} on managerial competency characteristics (at the .01 level)

	Hypotheses & characteristics of managerial competency	Between-group differences and relative ranks
1	Is able to make quick decisions	No difference, high
2	Accepts new ideas	No difference, high
3	Has careful preparation before a decision	No difference, high
4	Has clarity of purpose	Group CM_{jv}>Group BM_{jv}
5	Creates a climate characterised by trust	Group CM_{jv}>Group BM_{jv}
6	Encourages visions	Group CM_{jv}>Group BM_{jv}
7	Creates order and structure	Group CM_{jv}>Group BM_{jv}
8	Is flexible	Group CM_{jv}>Group BM_{jv}
9	Fully informs staff of decisions	Group CM_{jv}>Group BM_{jv}
10	Gives continuous feedback of results	Group CM_{jv}>Group BM_{jv}
11	Gives responsibility to staff members	Group CM_{jv}>Group BM_{jv}
12	Handles conflicts openly	Group CM_{jv}>Group BM_{jv}
13	Has a sense of humour	No difference, high
14	Is honest in communication	Group CM_{jv}>Group BM_{jv}
15	Is a careful planner	Group CM_{jv}>Group BM_{jv}
16	Is cautious in action	No difference, high
17	Lets the staff member participate in decisions	No difference, modest
18	Makes sure plans and rules are followed	No difference, medium
19	Stimulates discussion among staff members	No difference, modest
20	Stimulates individual achievement	No difference, modest
21	Shows strong dedication to work	No difference, high

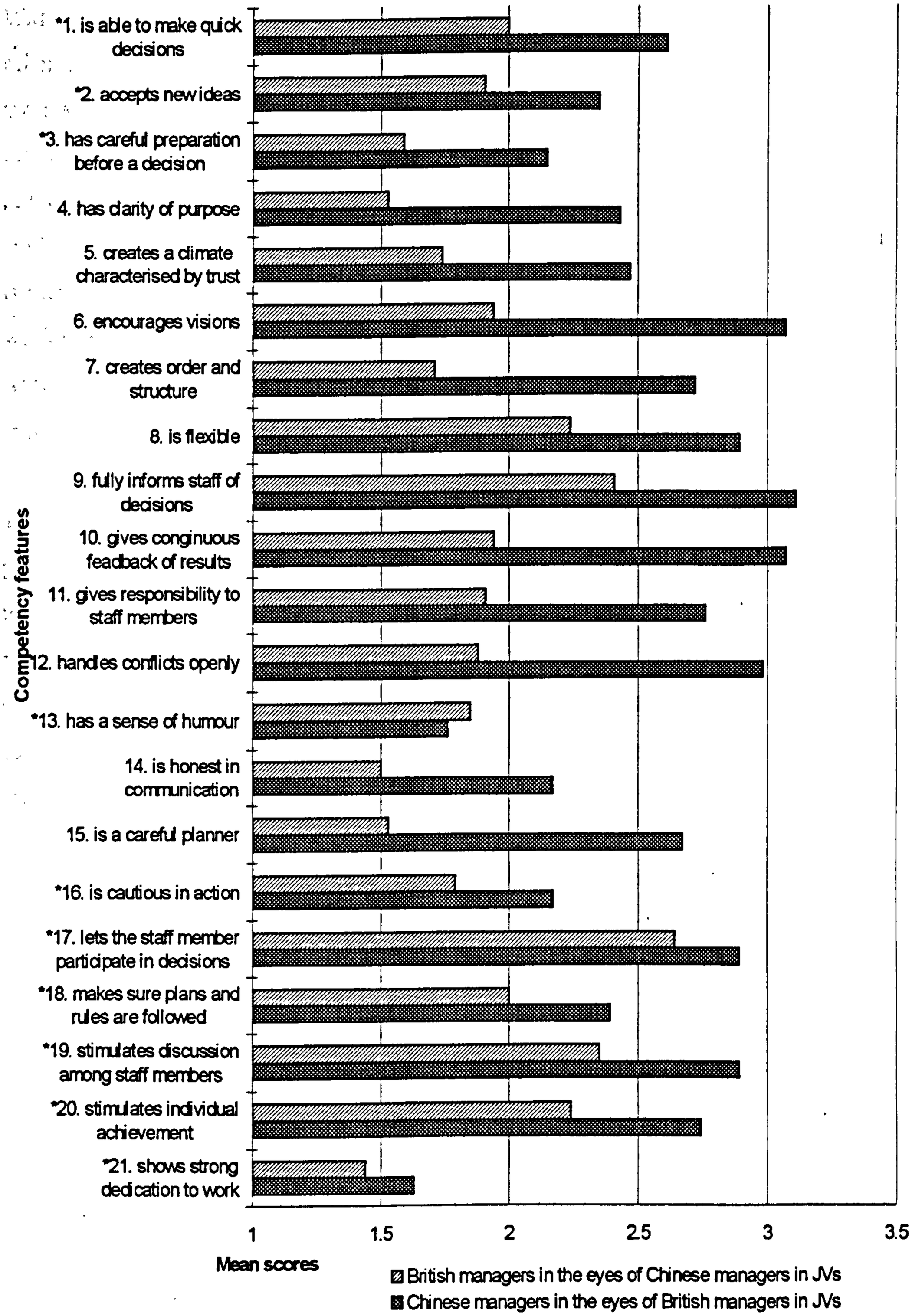

Figure 6.9 Managerial competency perceived by British and Chinese in Sino-British joint ventures (Scale: 1 = Absolutely true, ... 5 = Absolutely not true)
Note: * Differences are not statistically significant at the level of 0.01.

With regard to other features, both British and Chinese managers positively rated each other as being competent, with differences in the extent of the measurement. The mean scores indicate that on average the Chinese managers rated the British managers more positively that the British managers rated the Chinese managers. For instance, in terms of the items identified as the most important by the British managers in other studies (trust, flexibility), Chinese managers rated British managers higher than the British managers rated the Chinese managers. On items regarding formal structure in work (item 7),), handling conflict openly (item 12), honesty (item 14) and planning in work (item 15), Chinese managers also rated the British managers more positively than the British managers rated the Chinese managers.

With regard to SBJVs, the understanding of how British and Chinese managers have perceived their counterparts' competence provides unique value in assisting their self-management process to achieve a better fit with their managerial partners and the working environment. These findings have provided, to an approximate extent, insights into the image of British and Chinese managers in each other's mind. They can serve as a guideline for both sides with regard to how to improve both their management competence and their image in co-operative working relationships.

Of particular importance is the understanding of how one is perceived by the SBJV counterpart in terms of competence as expected by the counterpart. As learning and adaptation is crucial in achieving an effective co-operative relationship in a SBJV, "self-management" is an effective approach toward mutual adaptation. To make self-management work, a manager needs to carry out self-observation or self-assessment, comparison of information with the goals for the given behaviour, and self-administration of appropriate behaviours corresponding to the performance goals. The finding from the present analysis of British and Chinese managers' perceived competence has provided first hand information that is valuable for them to see themselves as well as their counterparts. These observations provide valuable insights that could guide the British and Chinese managers to implement self-management processes and better adapt themselves to the multiple expectations and diverse performance criteria that are characteristic of IJVs.

6.6 Conclusion

In this chapter the findings from the previous data analyses have been discussed in the light of their implications for improving the understanding between the British and Chinese managers in SBJVs. On the basis of the data analyses, the differences and similarities have been highlighted in the context of the conditions of inter-personal trust, styles of handling inter-personal conflict and perceived managerial competency in the eyes of the counterparts in SBJVs. In conclusion, the British and Chinese managers generally possess different management styles with culturally different characteristics. On some dimensions, however, the differences are not as far apart as people generally assumed. For the British and Chinese managers to improve the understanding of each other, it is important to identify the differences and similarities in the elements that underlie their interactive behaviour within the bounded system of the SBJV.

Some limitations embedded in the research process require caution in drawing implications from the findings. For this reason the implications discussed in the chapter are only intended to provide pointers for British and Chinese managers to search for the most appropriate approaches to improving their working relationships and SBJV performance. Managers prepared for or involved in working in SBJVs should sensitise themselves to these issues either through training programmes or process of on-site work, and develop more effective approaches to co-ordinated interaction and improved co-operation in their own context.

CHAPTER 7 CONCLUSION

7.1 Introduction

Building upon the understanding of the received studies in IJVs, this research project proposed a relational-centred framework within which four key issues were examined in the context of SBJVs:

a) the conditions of inter-personal trust;
b) the styles of handling inter-personal conflict;
c) the perceived managerial competency;
d) the managerial role expectations.

First and most importantly, through the work described in the previous chapters, the project has achieved the following primary objectives introduced in the first chapter:

1. To evaluate the cross-cultural validity of the measurement instrument for the conditions of inter-personal trust between the British and Chinese.

2. To identify the differences in the conditions of inter-personal trust between the British and Chinese managers in SBJVs.

3. To evaluate the cross-cultural validity of the measurement instrument for the styles of handling inter-personal conflict between the British and Chinese.

4. To identify the differences in the styles of handling inter-personal conflict between the British and Chinese managers in SBJVs.

5. To identify the differences in the perceived managerial competency between the British and Chinese managers in SBJVs.

6. To explore the differences in the managerial role expectations between the British and Chinese managers in SBJVs.

7. To explore the implications of the above findings for improving the inter-personal working relationships between the British and Chinese managers for the successful co-operation in SBJVs.

In Chapter 2, the main streams of the received theories of IJVs were reviewed. Building upon the received theories of IJVs as well as responding to the criticisms in the literature, a research framework was proposed focusing on the working relationships in SBJVs, which incorporated the issues of the conditions of inter-personal trust, styles of handling inter-personal conflict in the work relationships between the British and Chinese managers, the perceived managerial competency and managerial role expectations between British and Chinese managers in SBJVs.

Chapter 3 introduced the general bases of hypothesis generation. This together with the research framework generated test hypotheses for the first three key issues. They were in line with the two-fold aims of the research, i.e., testing the cross-cultural applicability of the measuring instruments, and identifying the differences between the British and Chinese managers. Chapter 4 introduced the methodologies used in the present research together with discussions on the justification of the choice of certain analytical techniques. Appropriate research design and analytical techniques were identified using the most recent developments in the social sciences, cross-cultural psychology, and in particular, in international business and marketing.

In Chapter 5, empirical data analyses were reported in detail with regard to the key research issues of the conditions of inter-personal trust, styles of handling inter-personal conflict, managerial competency and managerial role expectations in the context of SBJVs. The testing of the hypotheses provided empirical evidence that bears important implications for cross-cultural equivalence of the measurement instruments and the key issues under investigation within the present study. The comparative analyses revealed differences as well as similarities between the British

and Chinese managers in regard to the above key issues. Relevant theoretical implications were also discussed in each sub-section in the chapter. Chapter 6 provided a discussion on the managerial implications of the findings from the present study with the aim to add to the existing knowledge of academics, and business executives in particular.

In the following sections, some conclusions are drawn in the light of main contributions of the present work, research limitations and future research directions.

7.2 Main contributions

First, the present study has synthesised the arguments in the IJV literature on the importance of social dimensions and inter-personal relationships in the management of IJVs, and has put such a relational-centred framework in an empirical investigation into the most important issues in the SBJV context.

Second, the present work evaluated cross-cultural applicability of two measurement instruments, CTI and ROCI-II, in the British and Chinese cultural contexts. It was found that the original scales of the CTI and ROCI-II instruments generated in the American culture were not applicable to the British and Chinese cultures. The findings have provided new empirical evidence to support the warning that using a measurement instrument generated in one culture for research in another culture can lead to biased results if the instrument is not tested for its cross-cultural equivalence. Statistical analyses by EFA and CFA assisted in generating a set of measurement scales from within each of the original measurement instruments. These respecified scales were tested by the CFA and were proven to be valid with cross-cultural equivalence based on the sample data. This cross-cultural measurement validation has provided empirical evidence for achieving "derived etics" from "imposed etics" when faced with practical constraints in cross-cultural research. In addition, the validation of the CTI and ROCI-II scales not only provided a valid instrument for examination of the key issues in the SBJV context, it has also provided some new insights which call for further testing of the two instruments with new data.

Third, the analyses on the conditions of inter-personal trust have revealed that not all the seven factors are significant in influencing overall trust between British and Chinese managers in SBJVs. From the British manager's perspective, the Chinese manager's *integrity* and *availability* are significant antecedents of the British manager's trust in the Chinese manager. From the Chinese manager's perspective, the British manager's *integrity*, *openness* and *competence* are significant antecedents of the Chinese manager's trust in the British manager. These findings have provided important information for the understanding of the behavioural characteristics of British and Chinese managers in their working relations in SBJVs. The difference in the antecedents of inter-personal trust in the SBJV context has also provided important empirical evidence for further research on the issue of inter-personal trust in IJVs.

Fourth, the analyses of styles of handling inter-personal conflict have revealed important empirical evidence in regard to British and Chinese managers' behavioural characteristics in different organisational settings. Both similarities and differences in using the five styles of handling inter-personal conflict have been identified. One of the important implications is that the change of the organisational context and the counterpart in inter-personal interaction can cause alteration in behavioural patterns such as the styles of handling inter-personal conflict. This has provided a valuable pointer for British and Chinese managers to understand each other's approaches to conflict resolution and the underlying sources of their approaches. Furthermore, these findings have provided evidence in support of new efforts to investigate the related issues such as the relationships between styles of handling conflict and inter-personal trust in IJVs in the future research.

Fifth, the comparison of managerial competence perceived between British and Chinese managers has provided important insights into the important issue of competence in the IJV context. The findings provided empirical evidence that British and Chinese managers have more common and positive grounds for co-operation than generally assumed. In particular, with such a culturally diverse construct as competence, the twenty-one items used in this study have provided easy-to-

understand pointers for British and Chinese managers. The characteristics identified in the analyses also provide valuable data for more sophisticated investigations of the construct in cross-cultural research in the future.

Sixth, the exploratory analysis of the issue of managerial role expectation has uncovered a critically important area in the management of IJVs. The empirical findings of mis-match of the role expectations between the British and Chinese managers give rise to the new important issues of isomorphism and construct equivalence in the management practice as well as research in the cross-cultural context.

Overall, these findings within the present research have contributed to the body of knowledge in cross-cultural research in the area of IJVs and comparative management studies. The findings and their implications have provided valuable information for advancing theories in IJVs and improving British and Chinese managers' knowledge about each other and the related key issues underlying the success of SBJVs.

7.3 Limitations

One major limitation of the present study is the size of the samples. Although efforts were made, the practical difficulties prevented the researcher to obtain the ideal size for each sub-sample. This limitation caused certain constraints on the generalisation of the results from the LISREL analyses of the measurement instrument and led to the choice of regression analysis that is less ideal than LISREL or MANCOVER for investigation of the significant antecedents of inter-personal trust in SBJVs. In addition, the two large samples (Group BM and Group CM) did not match in their demographic variables, hence caution should be taken in interpretation of the findings and replication with new data is needed.

Due to the diverse issues within the present study, the time and financial constraints prevented the research from further investigating some important causal relationships between the key variables. For instance, the relationship between the conditions of

inter-personal trust and the styles of handling inter-personal conflict is worth investigating but purposely excluded from the present research. The perceived performance of SBJVs was not included in the survey either, due to the limit of the questionnaire's length. Therefore, the present investigation was limited to an examination of each key issue in isolation although they were simultaneously conceptualised in the relational-centred research model.

Finally, in order to keep the work within a reasonable scope of volume, the discussions of both theoretical and managerial implications were constrained within their own domain of theoretical and practical significance with only limited reference made to other related theories. The researcher is cognisant of the necessity and importance to draw the implications in the light of relevant theories such as Hofstede's (1980) theories on culture, the theories of collectivism versus individualism, studies on high versus low context societies, etc. Due to the space limit of the present work, it was decided to put these discussions in a separate report which as originally planned will be circulated to the participants of the survey and other business executives with interests in SBJVs.

7.4 Future research directions

The present research was accomplished within the relationship-centred framework. This framework is build upon the understanding that a) the social dimension governing work relationships in IJVs is instrumental in explaining part of the problems that managers experience in IJVs (Beamish, 1985); b) issues pertinent to social and "personal chemistry" dimensions require more in-depth studies at the micro, inter-personal relationship level; c) new efforts are needed to be made to the identification and measurement of culturally related transaction costs and the way in which these might be surmounted, circumvented or minimised (Dunning, 1993); d) culture is one of the key determinants for the choice of IJVs (Buckley and Casson, 1996); and e) IJVs' lack of specificity in mutual commitment leads to dependence on "mutual insurance" (Buckley and Casson, 1996), which is a function of trust between the IJV partners (Casson, 1991; Ring and Van de Ven, 1994; Buckley and Casson, 1996).

With this research framework, the present study identified inter-personal trust, styles of handling inter-personal conflict, managerial competence and role expectations as the key issues underlying working relationships between IJV partners and directly affecting IJV performance. Given the large amount of work needed to carry out an overall examination of these issues, the present research was limited to examining the properties of these issues with each issue empirically investigated in isolation.

On the basis of the findings from the present work, further research is needed to replicate as well as extend the analyses of each key issue in greater depth. As an extension of the present work and a preliminary framework for work in the next stage, a *relationship-centred structural model* is proposed in Figure 7.1 for future research of IJVs. By "structural model" it is meant to focus on investigation of the causal relations between the key factors indicated in the framework.

The key factor of trust between IJV partners will be examined in terms of its indirect effect through IJV working relationships as well as its direct impact on IJV performance. In addition, causal relations between inter-personal trust and its antecedents and other key factors will be analysed. The IJV working relationship will be examined as a function of the key factors of the level of inter-personal trust, styles of handling inter-personal conflict, perceived managerial competence and the match of managerial role expectations. Each of the key factors will be investigated taking into account the influences of cultural distance, knowledge of the IJV counterpart, power symmetry between IJV partners, IJV type (i.e., equity versus contractual IJV) and the IJV's years of operation. It is hoped that by following this approach valuable insights will be obtained to clarify some of the confusions in understanding IJV issues and advance the theories of IJVs on the social-relationship dimension as a branch of knowledge complementary to a more comprehensive and cohesive family of theories of IJVs that is currently emerging.

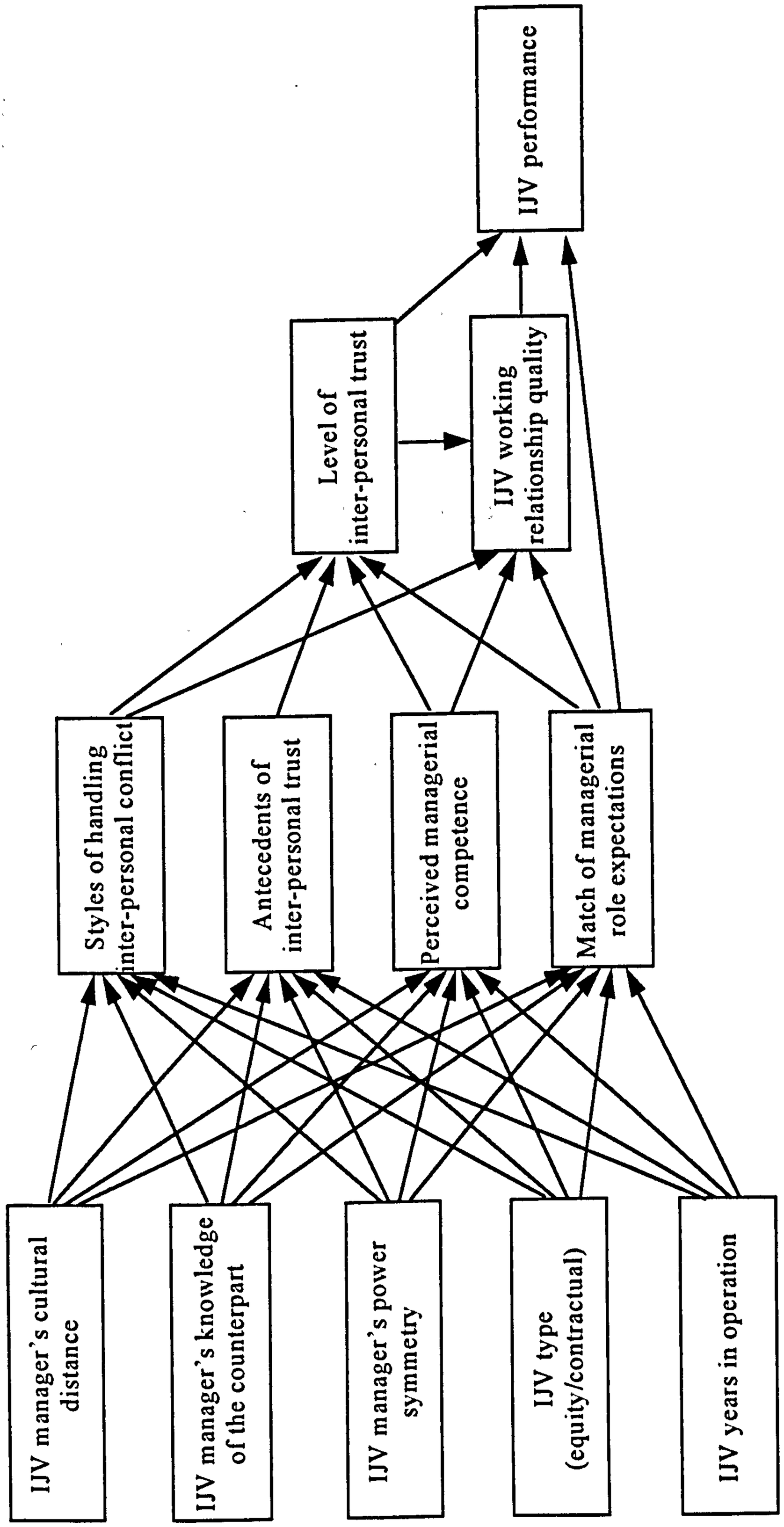

Figure 7.1 A relational-centred structural model for future research of IJVs

APPENDIX 1 The questionnaire for Group BM_{jv}

Leicester Business School

A QUESTIONNAIRE on The Management of Sino-British Collaborative Operations

Charles Cui-Chi
1995

Charles Cui-Chi Questionnaire / De Montfort University Sorting number: _____/_____/_____ (Confidential)

To whom it may concern

This questionnaire forms part of a study we are making on collaboration between British and Chinese managers. The special feature of this study is that it examines the working relationship between an individual and his/her counterpart in the same collaborative organisation. Therefore the questionnaire is used to ask your opinion and your counterpart's opinion.

Each questionnaire will be treated as strictly confidential. No one except myself would have access to the original questionnaire responses. The results will be aggregated in any presentation and publication. A synopsis of the results in aggregate will be circulated to all participants to provide you with insights of perceptions of British and Chinese managers as a whole on critical managerial issues in managing successful collaborations.

As the research proceeds, you will be updated on the research. Those who have responded the questionnaire and their colleagues will be invited to be our guests at a symposium in the near future on the management of Sino-British collaborative businesses.

Thank you very much for your valuable opinion and support.

Yours faithfully,

Charles Cui-Chi
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De Montfort University
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(Please return your completed questionnaire to the above address.)

Charles Cui-Chi Questionnaire / De Montfort University Sorting number: _____/_____/_____ (Confidential)

Important note

Before you start to respond to the questionnaire, please provide the following information for our research sorting. In order to maintain strict confidentiality, this page is particularly designed to be separate from the questionnaire and may be returned in a separate envelope. This page will be maintained in a confidential private file.

Personal information:

Your name _____

The name of your parent company _____

Address of your parent company _____

_____ Post Code _____

(This address will be used for sending you the research results and updating information.)

Your current title/position in your parent company _____

"One project" and "one counterpart" principle

When you respond to the questionnaire please always refer to the same *one* collaborative operation in which you have most direct or frequent involvement, or which you think is most relevant to this survey. Please provide the following information about the one you decide to choose as relevant:

Name of the collaborative organisation	Nature of operation (e.g. equity joint venture, or contractual arrangement)

Please provide the following information about *one* Chinese counterpart whom you have closest and most frequent work contact in the above collaborative organisation. This information will help us to identify the response from your counterpart, so that *matched* comparative analysis can be conducted to provide useful results for your interest.

Name	Job titles in the collaborative organisation

(When you have completed filling in this page, please return it in the attached envelope.)

Section I Personal information

Please provide the following information to help identify your specific area of management and expertise, and how you fit into the relationships among the participating companies in the collaboration. Please fill in the blank or tick the box as appropriate.

1. Your nationality: British ☐ Chinese ☐ Other (please specify): _____
2. Your age:
   60 and above ☐ 50-59 ☐ 40-49 ☐ 30- 39 ☐ 29 and below ☐
3. How many years (approximate) have you been in managerial positions in general? _____ years.
4. Please indicate your total experiences with China until today, both professional and personal, by filling in the blanks as appropriate. Each item refers to your experiences both *in* and *outside* the present company. The time period "months" refers to *approximate* and *accumulative* duration.

   (a) Face-to-face contacts with Chinese: _____ months.

   (b) Domiciled in China: _____ months.

   (c) Involved in equity and/or contractual joint ventures with China: _____ months.

   (d) Involved in other types of co-operation (other than joint ventures) with China: _____ months.

   (e) Other contacts with Chinese (other than the above) and duration (please specify):

   _____

5. Which type of collaboration are you referring to for your responses in this questionnaire?
   (a) Equity joint venture ☐ **(Please go to Question 6 in Section II on this page.)**
   (b) Non-equity, contractual arrangement ☐ **(Please go to Question 7 in Section III on page 2.)**

Section II Basic information about the equity joint venture

6. Please provide the following information about the *equity joint venture* in which your company has participated with China, and to which you are referring in this questionnaire.

a) The name of the joint venture: _____

b) Location of the joint venture: City _____ Province _____

c) Your job title in the joint venture: _____ from ____/____ to ____/____
(Month / Year to Month / Year)

d) Composition of equity of the joint venture:

Total registered capital: £/US$/RMB _____

Country	Name of participating companies	Equity share (%)

e) Milestone dates of the joint venture progress:

	Month/year
Initial discussion started	_____/_____
First letter of intent signed	_____/_____
Feasibility study completed	_____/_____
Formal contract signed	_____/_____
Operation/production started.....	_____/_____
Contract extended/renewed	_____/_____
Period specified in the initial contract	from _____ (Year) to _____ (Year)
Period extended	from _____ (Year) to _____ (Year)

f) Main products/services and markets of the joint venture:

Products and/or services	Markets (Country or region)	Percentage of annual outputs

g) Management of the joint venture (please fill in the names of the participating companies, and tick the boxes and fill in the number as appropriate):

	Positions taken in the Joint Venture				
Name of participating companies	Chairman	Deputy Chairman	Number of Directors	General Manager	Deputy General Manager
	☐	☐	( )	☐	☐
	☐	☐	( )	☐	☐
	☐	☐	( )	☐	☐
	☐	☐	( )	☐	☐
	☐	☐	( )	☐	☐
	☐	☐	( )	☐	☐

Now please go to Question 8 in Section IV on page 3.

Section III Basic information about the contractual arrangement

7. Please provide the following information about the *contractual arrangement* in which your company has participated with China, and to which you are referring in this questionnaire.

a) The name of the contractual arrangement: _____

b) Location of the operation: City _____ Province _____

c) Your job title in the operation: _____ from ____ (Month) / ____ (Year) to ____ (Month) / ____ (Year)

d) Contents of the contractual arrangement (please tick as many as appropriate):

Licensing	☐	Contractual production	☐
Co-production	☐	Build-Operate-Transfer (BOT)	☐
Technology transfer	☐	Processing of material	☐

Others (please specify):

e) Milestone dates of the project progress:

	Month/year
Initial discussion started	____/____
First letter of intent signed	____/____
Feasibility study completed	____/____
Formal contract signed	____/____
Operation/production started.....	____/____
Contract extended/renewed	____/____
Period specified in the initial contract	from ____ (Year) to ____ (Year)
Period extended	from ____ (Year) to ____ (Year)

f) Main products/services and markets of the project:

Products and/or services	Markets (Country or region)	Percentage of annual outputs

g) Management of the operation (please fill in the names of the participating companies, and tick the boxes and fill in the number as appropriate):

	Positions Taken in the Collaborative Project		
Name of participating companies	General Manager	Deputy General Manager	Number and Title of Other Chief Executives
	☐	☐	( )
	☐	☐	( )
	☐	☐	( )
	☐	☐	( )

Now please go to next question.

Section IV Questions concerning management issues

8. Please give your opinions on your Chinese partner's objectives in the collaboration by ticking the boxes as appropriate.

We were aware of Chinese partners' objectives		We knew Chinese partners' objectives changed
Yes ☐.....No ☐	When we signed the letter of intent.	Yes ☐.....No ☐
Yes ☐.....No ☐	When we were doing feasibility study about the project.	Yes ☐.....No ☐
Yes ☐.....No ☐	When we were finalising the contract.	Yes ☐.....No ☐
Yes ☐.....No ☐	When we started the operation of the project.	Yes ☐.....No ☐
Yes ☐.....No ☐	When we got problems with the operation of the project.	Yes ☐.....No ☐
Yes ☐.....No ☐	When we were renewing our contract.	Yes ☐.... No ☐

9. The following are some statements that describe how you might feel about ***one Chinese counterpart*** whom you have most direct and frequent contact in managing the collaboration (whom you have indicated on the separate sheet "Important note" provided with the questionnaire). Please keep this person in mind as you respond to the following items. All your answers should refer to the same person. Please circle the letter at the right of each statement to show how you respond to that statement. (Although some statements seem similar, please answer each as a separate and independent statement, so that minor differences can be identified.)

	Strongly agree A	Moderately agree B	Undecided C	Moderately disagree D	Strongly disagree E
1) He/she is usually around when I need him/her.	A	B	C	D	E
2) I can find him/her when I want to talk with him/her. ..	A	B	C	D	E
3) It's usually hard for me to get in touch with him/her. ..	A	B	C	D	E
4) He/she is available when I need him/her.	A	B	C	D	E
5) H/she does things competently.	A	B	C	D	E
6) Unfortunately, he/she does things poorly.	A	B	C	D	E
7) He/she performs her/his tasks with skill.	A	B	C	D	E
8) He/she does things in a capable manner.	A	B	C	D	E
9) He/she does things consistently from one time to the next.	A	B	C	D	E
10) He/she does the same thing every time the situation is the same.	A	B	C	D	E
11) He/she behaves in a consistent manner.	A	B	C	D	E
12) I seldom know what he/she will do next.....	A	B	C	D	E
13) He/she keeps secrets that I tell him/her.	A	B	C	D	E
14) He/she talks too much about sensitive information that I give him/her.	A	B	C	D	E
15) If I give him/her confidential information, he/she keeps it confidential. ...	A	B	C	D	E
16) He/she does not tell others about things if I ask that they be kept secret.	A	B	C	D	E
17) He/she treats me fairly.	A	B	C	D	E
18) He/she treats others better than he/she treats me. ...	A	B	C	D	E
19) He/she always gives me a fair deal.....	A	B	C	D	E
20) He/she treats me on an equal basis with others.....	A	B	C	D	E
21) He/she always tells me the truth.	A	B	C	D	E
22) He/she would not lie to me.	A	B	C	D	E
23) He/she deals honestly with me.	A	B	C	D	E
24) Sometimes he/she does dishonest things.	A	B	C	D	E
25) He/she would not do anything to make me look bad.	A	B	C	D	E
26) He/she is likely to take advantage of me.	A	B	C	D	E
27) If I make a mistake, he/she will not use it against me.	A	B	C	D	E
28) I can discuss problems with him/her withouthaving the information used against me.	A	B	C	D	E

	Strongly agree A	Moderately agree B	Undecided C	Moderately disagree D	Strongly disagree E
29) He/she tells me what he/she is thinking.....	A	B	C	D	E
30) He/she tells me what's on his/her mind.	A	B	C	D	E
31) He/she shares his/her thoughts with me.	A	B	C	D	E
32) He/she keeps information from me.	A	B	C	D	E
33) Sometimes I can <u>not</u> trust him/her.....	A	B	C	D	E
34) I can count on him/her to be trustworthy.....	A	B	C	D	E
35) I feel that he/she can be trusted.	A	B	C	D	E
36) I trust him/her.	A	B	C	D	E
37) He/she follows through on promises made to me.	A	B	C	D	E
38) Keeping promises is a problem for him/her.....	A	B	C	D	E
39) If he/she promises something to me, he/she will stick to it. ...	A	B	C	D	E
40) He/she does things that he/she promises to do for me.	A	B	C	D	E
41) He/she readily takes in my ideas.	A	B	C	D	E
42) He/she really listens to me.	A	B	C	D	E
43) He/she often fails to listen to what I say.....	A	B	C	D	E
44) He/she makes an effort to understand what I have to say.	A	B	C	D	E
45) It is important for me to know that he/she trusts me. ..	A	B	C	D	E
46) I always try to figure out whether he/she trusts me. ..	A	B	C	D	E
47) I don't care whether he/she trusts me or not.....	A	B	C	D	E
48) I would try to improve the situation if I know he/she doesn't trust me. ..	A	B	C	D	E

10. What criteria does your parent company use to measure the performance of the collaborative project? Please briefly explain.

11. What are the characteristics of a Chinese counterpart in a ***superior*** organisational role that would make you feel happy to work with him/her in the collaborative organisation? Please first think of *four characteristics* and list each in a line, and then weight their relative importance by circling a number on the scale.

	Important				Extremely Important
	1	2	3	4	5
a) _____	1	2	3	4	5
b) _____	1	2	3	4	5
c) _____	1	2	3	4	5
d) _____	1	2	3	4	5

12. What are the characteristics of a *peer* Chinese counterpart that would make you feel happy to work with him/her in the collaborative organisation? Please first think of *four characteristics* and list each in a line, and then weight their relative importance by circling a number on the scale.

	Important				Extremely Important
	1	2	3	4	5
a) _____	1	2	3	4	5
b) _____	1	2	3	4	5
c) _____	1	2	3	4	5
d) _____	1	2	3	4	5

13. What are the characteristics of a ***subordinate*** Chinese counterpart that would make you feel happy to work with him/her in the collaborative organisation? Please first think of *four characteristics* and list each in a line, and then weight their relative importance by circling a number on the scale.

	Important				Extremely Important
	1	2	3	4	5
a) _____	1	2	3	4	5
b) _____	1	2	3	4	5
c) _____	1	2	3	4	5
d) _____	1	2	3	4	5

14. To the best of your own direct experience in working with your Chinese counterpart, how would you describe him/her based on the following characteristics? Please give your opinion by ticking the letter as appropriate.

	Absolutely true A	Almost true B	Undecided C	Almost not true D	Absolutely not true E
Is able to make quick decisions	A	B	C	D	E
Accepts new ideas	A	B	C	D	E
Has careful preparation before a decision	A	B	C	D	E
Has clarity of purpose	A	B	C	D	E
Creates a climate characterised by trust	A	B	C	D	E
Encourages visions	A	B	C	D	E
Creates order and structure	A	B	C	D	E
Is flexible	A	B	C	D	E
Fully informs staff of decisions	A	B	C	D	E
Gives continuous feedback of results	A	B	C	D	E
Gives responsibility to staff members	A	B	C	D	E
Handles conflicts openly	A	B	C	D	E
Has a sense of humour	A	B	C	D	E
Is honest in communication	A	B	C	D	E
Is a careful planner	A	B	C	D	E
Is cautious in action	A	B	C	D	E
Let the staff member participate in decisions	A	B	C	D	E

	Absolutely true A	Almost true B	Undecided C	Almost not true D	Absolutely not true E
Makes sure plans and rules are followed	A	B	C	D	E
Stimulates discussion among staff members	A	B	C	D	E
Stimulates individual achievement	A	B	C	D	E
Shows strong dedication to work	A	B	C	D	E

15. Sometimes you may have incompatibilities, disagreements, or differences in opinion (i.e., conflict) with your counterpart. Please tick a box on the scale provided after each statement, to indicate how you handle your conflict with your counterpart. Please try to recall as many recent conflict situations as possible in ranking these statements.

	Strongly agree A	Moderately agree B	Undecided C	Moderately disagree D	Strongly disagree E
1) I try to investigate an issue with my counterpart to find a solution acceptable to us.	☐	☐	☐	☐	☐
2) I generally try to satisfy the needs of my counterpart.	☐	☐	☐	☐	☐
3) I attempt to avoid being "put on the spot" and try to keep my conflict with my counterpart to myself.	☐	☐	☐	☐	☐
4) I try to integrate my ideas with those of my counterpart to come up with a decision jointly.	☐	☐	☐	☐	☐
5) I try to work with my counterpart to find solution to a problem which satisfy our expectations.	☐	☐	☐	☐	☐
6) I usually avoid open discussion of my differences with my counterpart.	☐	☐	☐	☐	☐
7) I try to find a middle course to resolve an impasse.	☐	☐	☐	☐	☐
8) I use my influence to get my ideas accepted.	☐	☐	☐	☐	☐
9) I use my authority to make a decision in my favour.	☐	☐	☐	☐	☐
10) I usually accommodate the wishes of my counterpart.	☐	☐	☐	☐	☐
11) I give in to the wishes of my counterpart.	☐	☐	☐	☐	☐
12) I exchange accurate information with my counterpart to solve a problem together.	☐	☐	☐	☐	☐
13) I usually allow concessions to my counterpart.	☐	☐	☐	☐	☐
14) I usually propose a middle ground for breaking deadlocks.	☐	☐	☐	☐	☐
15) I negotiate with my counterpart so that a compromise can be reached.	☐	☐	☐	☐	☐

	Strongly agree A	Moderately agree B	Undecided C	Moderately disagree D	Strongly disagree E
16) I try to stay away from disagreement with my counterpart.	☐	☐	☐	☐	☐
17) I avoid an encounter with my counterpart.	☐	☐	☐	☐	☐
18) I use my expertise to make a decision in my favour.	☐	☐	☐	☐	☐
19) I often go along with the suggestions of my counterpart.	☐	☐	☐	☐	☐
20) I use "give and take" so that a compromise can be made.	☐	☐	☐	☐	☐
21) I am generally firm in pursuing my side of the issue.	☐	☐	☐	☐	☐
22) I try to bring all our concerns out in the open so that the issues can be resolved in the best possible way.	☐	☐	☐	☐	☐
23) I collaborate with my counterpart to come up with decisions acceptable to us.	☐	☐	☐	☐	☐
24) I try to satisfy the expectations of my counterpart.	☐	☐	☐	☐	☐
25) I sometimes use my power to win a competitive situation.	☐	☐	☐	☐	☐
26) I try to keep my disagreement with my counterpart to myself in order to avoid hard feelings.	☐	☐	☐	☐	☐
27) I try to avoid unpleasant exchanges with my counterpart.	☐	☐	☐	☐	☐
28) I try to work with my counterpart for a proper understanding of a problem.	☐	☐	☐	☐	☐

(End of questions.)

Thank you very much for your time and support in giving your valuable opinions.

Please use the provided envelope to return your completed questionnaire to the following address:

Charles Cui-Chi
Department of Marketing
Leicester Business School
De Montfort University
The Gateway, Leicester
LE1 9BH England

APPENDIX 2 The questionnaire for Group CM_{jv}

德蒙福特大学（英国）

累斯特商学院

中英合资合作管理研究

意见征询表

DE MONTFORT
UNIVERSITY
LEICESTER

研究项目说明

此意见征询表是为我们目前进行的关于中英合资合作管理的研究而设计．此项研究旨在提供有助于中英双方人员增进相互理解的有价值的信息，以利于合作在平等互利基础上顺利进展和成功．此项研究从跨文化管理行为角度考察分析在合作项目的建设和运作过程中，中英双方人员的工作关系特点，以及影响这种关系的主要因素．因此，我们将采用此表分别征询参与同一合作项目的中英双方人员的意见，以便进行对比分析，使研究结果真正具有增进双方相互理解的独到价值．

我们诚挚盼望您惠于支持，对此表内的问题给于回答．每份经回答的征询表都将受到严格保密．所有经回答的征询表将先经过内容汇总，然后通过综合数理统计处理，从而使全部返馈信息融合为整体后再进行对比分析，并且分析结果仅以汇总形式表达．研究项目完成后将寄给每位被采访者一份报告，提供有助于中英项目人员顺利合作成功的有价值的信息．每位被采访者或其同事还将被邀请参加在不久的将来我们将举办的中英合资合作管理国际研讨会．

研究采访对象包括:

1．合资经营企业（又称“股权式合营企业”或“合营企业”），也包括外商投资股份有限公司．

2．其它各种形式的合作，如：合作经营企业（又称“合作企业”），合作开采，联合促销和销售及服务，合作市场开发，合作技术服务，合作研究与开发，合作咨询服务，合作融资服务，合作培训，“三来一补”，许可证转让，技术转让，BOT 项目，等等．

诚挚感谢您的支持与合作!

英国德蒙福特大学，莱斯特商学院
项目研究员：崔 赤 _____（签名）

通讯地址： Mr. Charles Cui-Chi
Dept. of Marketing
Leicester Business School
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传真（24 小时）：(00) 44 116 251 7548

（此页供被采访者保存．）

英国伯明翰特大学默斯特商学院　　中英合资合作管理研究意见征询表（编号:　/　）

填表说明

一．在您开始填表前，请先写下有关您的以下几项信息，以便我们内容汇总时进行数据管理．为了保证对回答者的严格保密，此页专门设计成可与意见征询表相分离，供您填写后单独寄回．意见征询表本身只需用不记名方式填写．

1．您的姓名：_____

2．您希望我们将研究报告和邀请您参加"中英合资合作管理国际研讨会"的信件寄到您何处地址？（请在下面写明．）

地址：_____

_____

电话：_____ 传真：_____

二．由于此研究采用对比比较分析方法，请您在回答表内问题时，（1）至始至终针对同一个您直接参与或有关联的合作项目，（2）至始至终针对同一个与您有最直接或最频繁工作联系的英方人员．请在下面写明您考虑回答问题时准备针对的一个项目和一个英方人员，以便我们内容汇总时数据管理．所有信息都会受到严格保密．

1．项目企业名称：_____

2．合作形式（请在方框内打勾注明．如果是"其它合作形式"，请加以简要说明．）：

►股权式合资经营（或股份有限公司） ☐

►其它合作形式（参见"研究项目说明"） ☐_____

（简要说明）

3．英方人员名字：_____

4．此英方人员在项目中担任的职务和作用：_____

（此页填写完后可用所附信封单独寄回．如果您没有将此页分开，我们在收到您填好后的表时会将此页分开单独保存，以保证意见征询表上不会有您的名字．）

第一部分 个人基本情况

（请根据您的实际情况在以下问题的空栏内填写或方框内打勾，以供我们统计分析时作为数据管理参数.）

1. 您的国籍: 中国□ 其它（请说明）: _____

2. 您的年龄（请在与您年龄范围相对应的方框内打勾）:
60岁以上□ 50-59岁□ 40-49岁□ 30-39岁□ 29岁以下□

3. 迄今为止您涉及管理工作大致有多少年? _____年.

4. 为便于我们分析管理行为与接触外来文化经历的关系，请说明迄今为止您与英国有关的工作和个人交往经经历（包括您在目前单位内和目前单位以外的以前的与英国有关经历），以及涉及外资和对外合作的经历. 时间"月"指所经历的大致累计月数.

(1) 与英国人（面对面）直接接触_____月.
(2) 住在英国_____月.
(3) 涉及与英国有关的合资合作项目_____月.
(4) 涉及除英国外的其它合资合作项目_____月.
(5) 除以上以外的其它涉外工作经历_____月.
(5) 除以上以外的其它同英国有关的经历和期限（请说明）:
（经历）_____.（时间）_____月.

5. 您在回答此意见征询表时所针对的是哪种类型的合作项目? 请在下面对应的方框内打勾说明，然后按后面括弧内说明选择回答下面有关部分的问题.

►我所针对的是股权式（或股份制）合资企业□（请从本页第二部分第6项开始回答.）
►我所针对的是非股权式的其它各种合作 □（请从第3页第三部分第14项开始回答.）

第二部分 关于回答此表问题时所针对的股权式合资企业的基本情况

6. 股权式合资企业的名称: _____

7. 所在地点: _____省_____市

8. 您与此股权式合资企业的关系（担任的职务、起到的作用）:
_____从_____至_____
（年、月） （年、月）

9. 股权式合资企业的组成:

注册资本: _____ 美元/英镑/人民币

合营各方名称	国 别	所占股本(%)

10. 合资企业主要进展日:

开始初步洽谈 · · ·

第三部分 关于回答此表时所针对的非股权式其它各种合作形式的基本情况

14. 合作项目的名称: _____

15. 所在地点: _____ 省 _____ 市

16. 您与此合作企业（或项目）的关系（担任的职务、起到的作用）:

_____ 从_____（年、月） 至_____（年、月）

17. 合作内容:

合作生产	□	来料加工	□
合作开采	□	来样定制	□
许可证转让	□	来件装配	□
技术转让	□	BOT	□
补偿贸易	□	其它（请说明）: _____	

18. 合作项目主要进展日:

开始初步洽谈 · · ·

21. 合作企业的管理结构（请写明各合作方名称，然后在每一合作方派雇人员在合作企业所任职务的方框内打勾或写明职务和人员数目.）：

合作各方名称	在合作企业内所担任的职务		
	总经理	副总经理	其它主要管理人员(职务、名额)
_____	□	□	_____( )
_____	□	□	_____( )
_____	□	□	_____( )
_____	□	□	_____( )
_____	□	□	_____( )

▷（现在请接下去从第四部分第22项开始回答.）◁

第四部分 关于管理方面的问题

22. 请在下面合适的方框内打勾说明在中间各所列情况下您所了解到的英方参与合作的目的.

我们清楚英方的合作目的			我们知道英方合作目的有变化		
是□	否□	……当我们签署意向书时……	是□	否□
是□	否□	……当我们做可行性研究时……	是□	否□
是□	否□	……当我们最后确定合同内容时……	是□	否□
是□	否□	……当我们开始经营时……	是□	否□
是□	否□	……当我们的经营出现问题时……	是□	否□
是□	否□	……当我们修改合同时……	是□	否□

23. 以下各项是用来描绘您对与您最直接或最频繁接触的一个英方人员可能有的感觉（此英方人员也是您在"填表说明"那一页上写明的所针对的英方人员）. 请您始终针对这同一人作回答. 请在每一项的右边打勾选择一个字母表明您对这一陈述的反应.（有些陈述可能看起来相似. 请您仍将每个陈述作为一个单独独立的句子考虑. 对其作出回答 以便能对细微差别进行分析.）

	非常同意 A	基本同意 B	不能确定 C	不太同意 D	非常不同意 E
(1) 我需要他的时候他一般都会在. ……	A□	B□	C□	D□	E□
(2) 我想同他谈话时能够找到他. ……	A□	B□	C□	D□	E□
(3) 我要跟他接触一般是很难的. ……	A□	B□	C□	D□	E□
(4) 我只要需要他时他都在. ……	A□	B□	C□	D□	E□
(5) 他干事很有能力 ……	A□	B□	C□	D□	E□

	非常同意 A	基本同意 B	不能确定 C	不太同意 D	非常不同意 E
(6) 很遗憾，他干事干不好。	A□	B□	C□	D□	E□
(7) 他在业务上很能干。	A□	B□	C□	D□	E□
(8) 他做事很有办法。	A□	B□	C□	D□	E□
(9) 他做事前后很一致。	A□	B□	C□	D□	E□
(10) 他在同样情况下总是以同样方式处事。	A□	B□	C□	D□	E□
(11) 他的行为显得有一致性。	A□	B□	C□	D□	E□
(12) 我很少知道他下一步要做什么。	A□	B□	C□	D□	E□
(13) 我让他不要往外讲的事他很守密。	A□	B□	C□	D□	E□
(14) 他到处去讲我告诉他的一些敏感的信息。	A□	B□	C□	D□	E□
(15) 如果我告诉他一些机密，他会严守秘密。	A□	B□	C□	D□	E□
(16) 只要我说哪些事该保密，他就不会对别人讲。	A□	B□	C□	D□	E□
(17) 他对待我很公平。	A□	B□	C□	D□	E□
(18) 他对我不如对别人好。	A□	B□	C□	D□	E□
(19) 他处理我的事总是很公平。	A□	B□	C□	D□	E□
(20) 他把我和别人放在同等基础上对待。	A□	B□	C□	D□	E□
(21) 他总是告诉我实话。	A□	B□	C□	D□	E□
(22) 他不会对我说假话。	A□	B□	C□	D□	E□
(23) 他对我很诚实。	A□	B□	C□	D□	E□
(24) 有时候他做事不诚实。	A□	B□	C□	D□	E□
(25) 他不会做任何让我出丑的事。	A□	B□	C□	D□	E□
(26) 他爱占我的便宜。	A□	B□	C□	D□	E□
(27) 如果我出了差错，他不会以此找我的麻烦。	A□	B□	C□	D□	E□
(28) 我有问题可同他商量，他不会利用所知道的情况对付我。	A□	B□	C□	D□	E□
(29) 他想什么就告诉我什么。	A□	B□	C□	D□	E□
(30) 他心里有什么话全告诉我。	A□	B□	C□	D□	E□
(31) 他有什么想法会同我交流。	A□	B□	C□	D□	E□
(32) 有情况他不让我知道。	A□	B□	C□	D□	E□
(33) 有时候我不能相信他。	A□	B□	C□	D□	E□
(34) 我认为他是值得信赖的。	A□	B□	C□	D□	E□
(35) 我感觉他可以信得过。	A□	B□	C□	D□	E□
(36) 我信任他。	A□	B□	C□	D□	E□
(37) 他对我信守诺言。	A□	B□	C□	D□	E□

	非常同意 A	基本同意 B	不能确定 C	不太同意 D	非常不同意 E
(38) 他这人难以说话算数。	A□	B□	C□	D□	E□
(39) 只要是答应了我的事，他就会坚持做到。	A□	B□	C□	D□	E□
(40) 凡是他答应我的事他就会去做。	A□	B□	C□	D□	E□
(41) 他很能理解我的想法。	A□	B□	C□	D□	E□
(42) 他很认真听我的想法。	A□	B□	C□	D□	E□
(43) 他常常不听我说。	A□	B□	C□	D□	E□
(44) 我说什么他都尽可能去理解。	A□	B□	C□	D□	E□
(45) 知道他信任我对我来讲很重要。	A□	B□	C□	D□	E□
(46) 我总是尽量弄清他是否信任我。	A□	B□	C□	D□	E□
(47) 我不在意他是否信任我。	A□	B□	C□	D□	E□
(48) 如果知道他不信任我，我会去努力改善这种局面。	A□	B□	C□	D□	E□

24．您的中方母公司以什么为标准对合作项目的运行好坏进行测定？请简要说明。

25．在合作项目中，对于工作职位比您高的英方人员，您希望他具有什么样的个人素质特征能够使您愉快地同他共事？请您先在下面简要概括列出四个特征，然后分别在右边对应尺度上打圈标出一个数字说明您认为该特征的相对重要程度。（1表示重要，依次至5表示最重要。）

	重要 1	2	3	4	最重要 5
(a) _____	1	2	3	4	5
(b) _____	1	2	3	4	5
(c) _____	1	2	3	4	5
(d) _____	1	2	3	4	5

26．在合作项目中，对于与您同级的英方人员，您希望他具有什么样的个人素质特征能够使您愉快地同他共事？请您先在下面简要概括列出四个特征，然后分别在右边对应尺度上打圈标出一个数字说明您认为该特征的相对重要程度。（1表示重要，依次至5表示最重要。）

	重要 1	2	3	4	最重要 5
(a) _____	1	2	3	4	5
(b) _____	1	2	3	4	5
(c) _____	1	2	3	4	5
(d) _____	1	2	3	4	5

27．在合作项目中，对于工作职务比您低的英方人员，您希望他具有什么样的个人素质特征能够使您愉快地同他共事？请您先在下面简要概括列出四个特征，然后分别在右边对应尺度上打圈标出一个数字说明您认为该特征的相对重要程度．（1表示重要，依次至5表示最重要．）

	重要 1	2	3	4	最重要 5
(a) _____	1	2	3	4	5
(b) _____	1	2	3	4	5
(c) _____	1	2	3	4	5
(d) _____	1	2	3	4	5

28．根据您自己的观察，您回答问题时所针对的那一位英方人员在以下各特点方面表现如何？请在每一特点的右边打勾选择一个字母表示您的看法．

	完全属实 A	基本属实 B	不能确定 C	不太属实 D	完全不属实 E
(1) 能够很快作出决策．	A□	B□	C□	D□	E□
(2) 善于接受新观点．	A□	B□	C□	D□	E□
(3) 决策前仔细筹划．	A□	B□	C□	D□	E□
(4) 做事有清楚的目的．	A□	B□	C□	D□	E□
(5) 创造相互信任的环境气氛．	A□	B□	C□	D□	E□
(6) 鼓励人们能够看到将来的长远目标．	A□	B□	C□	D□	E□
(7) 建立有秩序有结构的工作环境．	A□	B□	C□	D□	E□
(8) 具有灵活性．	A□	B□	C□	D□	E□
(9) 让雇员充分了解企业决策．	A□	B□	C□	D□	E□
(10) 不断提供关于结果的返馈．	A□	B□	C□	D□	E□
(11) 授予雇员责任．	A□	B□	C□	D□	E□
(12) 开诚布公地处理矛盾冲突．	A□	B□	C□	D□	E□
(13) 有幽默感．	A□	B□	C□	D□	E□
(14) 谈吐诚实．	A□	B□	C□	D□	E□
(15) 善于仔细安排和计划．	A□	B□	C□	D□	E□
(16) 行动谨慎．	A□	B□	C□	D□	E□
(17) 让雇员参与决策．	A□	B□	C□	D□	E□
(18) 保证计划和规定能够实施．	A□	B□	C□	D□	E□
(19) 激励雇员之间商量讨论．	A□	B□	C□	D□	E□
(20) 激励个人进取心．	A□	B□	C□	D□	E□
(21) 对工作全心全意．	A□	B□	C□	D□	E□

29．某些时候您可能会与您所针对的那位英方人员想法格格不入，彼此观点对立，或各自看法不一（概括称为"冲突"）．请在下面每一陈述的右边打勾选择一个字母说明与这位英方人员有冲突时您一般是如何处理的．请您尽可能多回忆一些最近发生过的冲突再确定选择回答．

	非常同意 A	基本同意 B	不能确定 C	不太同意 D	非常不同意 E
(1) 我尽量同他一起了解情况，寻找一种我们彼此都能接受的解决办法．	A□	B□	C□	D□	E□
(2) 我一般情况下尽量满足他的需要．	A□	B□	C□	D□	E□
(3) 我避免陷入尴境，尽量回避冲突．	A□	B□	C□	D□	E□
(4) 我尽量将我的想法与他的想法相融合，以便取得共同一致的决定．	A□	B□	C□	D□	E□
(5) 我尽量与他一起共同寻找能满足我们预期想法的解决问题的办法．	A□	B□	C□	D□	E□
(6) 我通常避免跟他敞开讨论我的不同意见．	A□	B□	C□	D□	E□
(7) 我尽量寻找一条中间途径来解除冲突	A□	B□	C□	D□	E□
(8) 我用我的影响让他接受我的观点．	A□	B□	C□	D□	E□
(9) 我用我的职权作出有利于我的观点的决定．	A□	B□	C□	D□	E□
(10) 我通常会考虑他的愿望．	A□	B□	C□	D□	E□
(11) 我放弃自己的观点来满足他的希望．	A□	B□	C□	D□	E□
(12) 我同他交换准确情况，共同解决问题．	A□	B□	C□	D□	E□
(13) 我通常会对他作出一些让步．	A□	B□	C□	D□	E□
(14) 我通常提出折衷办法来摆脱相持不下局势．	A□	B□	C□	D□	E□
(15) 我同他通过谈判来达成妥协．	A□	B□	C□	D□	E□
(16) 我尽量避免同他有争议．	A□	B□	C□	D□	E□
(17) 我避免同他发生对立．	A□	B□	C□	D□	E□
(18) 我用我的知识和特长来使作出的决定有利于我的观点．	A□	B□	C□	D□	E□
(19) 我常常接受或容纳他的建议．	A□	B□	C□	D□	E□
(20) 我采取"有争有让"的态度，以便于达成妥协．	A□	B□	C□	D□	E□
(21) 一般来讲，我会坚持自己的立场．	A□	B□	C□	D□	E□
(22) 我尽量将我们所关注的问题全摆出来，以便能找到解决问题的最好办法．	A□	B□	C□	D□	E□
(23) 我同他相互协作寻求我们都能接受的办法．	A□	B□	C□	D□	E□
(24) 我尽量满足他的预期要求．	A□	B□	C□	D□	E□
(25) 有时候我用我的权力在各方竞争中取胜．	A□	B□	C□	D□	E□
(26) 我尽量保留我同他的不同观点，以避免伤了和气．	A□	B□	C□	D□	E□
(27) 跟他来往的时候我尽量避免出现不愉快的情况．	A□	B□	C□	D□	E□
(28) 我尽量同他一道设法获得对问题的正确理解．	A□	B□	C□	D□	E□

（意见征询表问题结束 ）

非常感谢您花费宝贵时间回答此表和提出宝贵见解.

请用所提供的信封将回答好的意见征询表寄回下面地址:

Mr. Charles Cui-Chi
Department of Marketing, Leicester Business School
De Montfort University, The Gateway, Leicester
LE1 9BH, England （英国）

APPENDIX 3 Selected LISREL outputs for the final model of CTI (Table 5.17)

Baseline model

```
                                L I S R E L  7.20

                                       BY

                        KARL G JORESKOG AND DAG SORBOM

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THE FOLLOWING LISREL CONTROL LINES HAVE BEEN READ :

DA NG=2 NO=132 NI=19 MA=CM XM=-0.989898D+09
KM FI=c:\windows\temp\spssb9.tmp FO
(5E14.6)
LA
 CTI034    CTI035    CTI036    CTI001    CTI004    CTI005    CTI006    CTI007
 CTI009    CTI011    CTI013    CTI015    CTI016    CTI021    CTI023    CTI029
 CTI030    CTI039    CTI040
MO NX=16 NY=3 NK=7 NE=1 LX=FU,FI LY=FU,FI TD=DI TE=DI BE=FU GA=FU PS=ST PH=ST
LK
AVAILABI    COMPETEN    CONSISTE    DISCREET    INTEGRIT
OPENNESS    PROMISE
LE
TRUST
PA LX
2(1 0 0 0 0 0 0)
3(0 1 0 0 0 0 0)
2(0 0 1 0 0 0 0)
3(0 0 0 1 0 0 0)
2(0 0 0 0 1 0 0)
2(0 0 0 0 0 1 0)
2(0 0 0 0 0 0 1)
PA LY
3(1)
PA GA
1 1 1 1 1 1 1
PA BE
0
PA PS
1
FI LY(1,1)
VA 1.0 LY(1,1)
FR TD(1,1) TD(2,2) TD(3,3) TD(4,4) TD(5,5) TD(6,6) TD(7,7) TD(8,8) TD(9,9)
FR TD(10,10) TD(11,11) TD(12,12) TD(14,14) TD(15,15) TD(16,16)
FR TE(1,1) TE(2,2) TE(3,3)
OU AD=OFF RO SE TV RS MI

                NUMBER OF INPUT VARIABLES 19

                NUMBER OF Y - VARIABLES    3

                NUMBER OF X - VARIABLES   16

                NUMBER OF ETA - VARIABLES  1

                NUMBER OF KSI - VARIABLES  7

                NUMBER OF OBSERVATIONS   132

                NUMBER OF GROUPS           2

THE FOLLOWING LISREL CONTROL LINES HAVE BEEN READ :

DA NO=226  NI=19 XM=-0.989898D+09
KM FI=c:\windows\temp\spssb9.tmp FO
(5E14.6)
```

```
LA
 CTI034    CTI035    CTI036    CTI001    CTI004    CTI005    CTI006    CTI007
 CTI009    CTI011    CTI013    CTI015    CTI016    CTI021    CTI023    CTI029
 CTI030    CTI039    CTI040
MO NX=16 NY=3 NK=7 NE=1 LX=PS LY=PS TD=PS TE=PS BE=PS GA=PS PS=PS PH=PS

LK
AVAILABI    COMPETEN    CONSISTE    DISCREET    INTEGRIT
OPENNESS    PROMISE
LE
TRUST
OU AD=OFF RO SE TV RS MI
```

NUMBER OF INPUT VARIABLES 19

NUMBER OF Y - VARIABLES 3

NUMBER OF X - VARIABLES 16

NUMBER OF ETA - VARIABLES 1

NUMBER OF KSI - VARIABLES 7

NUMBER OF OBSERVATIONS 226

NUMBER OF GROUPS 2

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

LAMBDA Y

	TRUST
CTI034	1.000
CTI035	1.173
CTI036	1.199

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.902	.000	.000	.000	.000	.000
CTI004	.789	.000	.000	.000	.000	.000
CTI005	.000	.922	.000	.000	.000	.000
CTI006	.000	.899	.000	.000	.000	.000
CTI007	.000	.799	.000	.000	.000	.000
CTI009	.000	.000	.901	.000	.000	.000
CTI011	.000	.000	.814	.000	.000	.000
CTI013	.000	.000	.000	.592	.000	.000
CTI015	.000	.000	.000	.965	.000	.000
CTI016	.000	.000	.000	.869	.000	.000
CTI021	.000	.000	.000	.000	.894	.000
CTI023	.000	.000	.000	.000	.934	.000
CTI029	.000	.000	.000	.000	.000	.886
CTI030	.000	.000	.000	.000	.000	.884
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	.892
CTI040	.987

BETA

	TRUST
TRUST	.000

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.048	.076	.071	.050	.378	-.040

GAMMA

	PROMISE
TRUST	.264

COVARIANCE MATRIX OF ETA AND KSI

	TRUST	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT
TRUST	.679					
AVAILABI	.486	1.000				
COMPETEN	.598	.552	1.000			
CONSISTE	.583	.586	.770	1.000		
DISCREET	.476	.379	.541	.505	1.000	
INTEGRIT	.682	.528	.663	.673	.581	1.000
OPENNESS	.407	.405	.554	.469	.293	.568
PROMISE	.643	.578	.704	.623	.468	.658

COVARIANCE MATRIX OF ETA AND KSI

	OPENNESS	PROMISE
OPENNESS	1.000	
PROMISE	.468	1.000

PSI

	TRUST
TRUST	.134

THETA EPS

CTI034	CTI035	CTI036
.322	.068	.025

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.187	.378	.152	.193	.362	.190

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.338	.650	.070	.246	.203	.128

THETA DELTA

CTI029	CTI030	CTI039	CTI040
.216	.219	.205	.027

SQUARED MULTIPLE CORRELATIONS FOR Y - VARIABLES

CTI034	CTI035	CTI036
.678	.933	.975

TOTAL COEFFICIENT OF DETERMINATION FOR Y - VARIABLES IS .982

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.813	.623	.849	.807	.638	.811

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.662	.350	.930	.754	.798	.872

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI029	CTI030	CTI039	CTI040
.784	.781	.795	.973

TOTAL COEFFICIENT OF DETERMINATION FOR X - VARIABLES IS 1.000

SQUARED MULTIPLE CORRELATIONS FOR STRUCTURAL EQUATIONS

TRUST
.803

TOTAL COEFFICIENT OF DETERMINATION FOR STRUCTURAL EQUATIONS IS .803

GOODNESS OF FIT INDEX = .901
ROOT MEAN SQUARE RESIDUAL = .038

FITTED RESIDUALS

	CTI034	CTI035	CTI036	CTI001	CTI004	CTI005
CTI034	.000					
CTI035	.002	.000				
CTI036	-.001	.000	.000			
CTI001	-.097	.022	.025	.000		
CTI004	-.104	-.035	-.043	.000	.000	
CTI005	.048	-.037	-.010	-.017	.062	.000
CTI006	.050	-.021	.002	-.020	.019	.005
CTI007	.117	.039	.041	.000	-.010	-.001
CTI009	-.006	.006	-.011	-.015	.022	.015
CTI011	.036	.019	.009	.005	.014	-.014
CTI013	.056	.116	.116	.097	.027	.093
CTI015	.008	-.005	-.007	.009	-.039	-.013
CTI016	.032	-.013	-.006	.026	-.053	-.040
CTI021	-.006	-.006	-.008	.027	-.001	-.001
CTI023	-.023	.012	.004	.004	-.046	-.027
CTI029	.025	.065	.024	.034	-.006	-.071
CTI030	-.023	-.033	-.037	-.018	-.031	-.006
CTI039	.059	-.002	-.020	.019	.019	.026
CTI040	.010	-.007	.004	-.011	.018	.002

FITTED RESIDUALS

	CTI006	CTI007	CTI009	CTI011	CTI013	CTI015
CTI006	.000					
CTI007	-.014	.000				
CTI009	-.007	-.004	.000			
CTI011	-.026	.046	.000	.000		
CTI013	.054	.029	.154	.028	.000	
CTI015	.020	.008	-.006	-.004	-.002	.000
CTI016	-.011	-.030	-.004	-.017	-.017	.002
CTI021	.076	-.009	.008	.018	.009	-.023
CTI023	.011	-.039	-.006	-.010	.086	.008
CTI029	.029	.006	-.014	-.020	.072	.015
CTI030	.042	.062	.001	.045	.082	-.007
CTI039	-.003	.048	-.043	-.001	.150	-.002
CTI040	-.013	.010	-.014	.038	.145	-.014

FITTED RESIDUALS

	CTI016	CTI021	CTI023	CTI029	CTI030	CTI039
CTI016	.000					
CTI021	-.004	.000				
CTI023	.002	.000	.000			
CTI029	.001	.063	-.001	.000		
CTI030	-.074	.000	-.038	.000	.000	
CTI039	-.006	.049	-.021	.001	-.037	.000
CTI040	.013	.041	-.026	.003	.001	.000

FITTED RESIDUALS

	CTI040
CTI040	.000

SUMMARY STATISTICS FOR FITTED RESIDUALS
SMALLEST FITTED RESIDUAL = -.104
MEDIAN FITTED RESIDUAL = .000
LARGEST FITTED RESIDUAL = .154

STANDARDIZED RESIDUALS

	CTI034	CTI035	CTI036	CTI001	CTI004	CTI005
CTI034	.000					
CTI035	.042	.000				
CTI036	-.016	.000	.000			
CTI001	-2.629	.584	.666	.000		
CTI004	-2.875	-.949	-1.156	.000	.000	
CTI005	1.234	-.929	-.243	-.453	1.711	.000
CTI006	1.294	-.523	.038	-.527	.517	.122
CTI007	3.112	.999	1.041	.004	-.271	-.017
CTI009	-.152	.158	-.281	-.408	.587	.383
CTI011	.953	.501	.228	.149	.395	-.359
CTI013	1.590	3.253	3.244	2.797	.791	2.630
CTI015	.221	-.126	-.191	.255	-1.116	-.334
CTI016	.860	-.347	-.150	.735	-1.513	-1.076
CTI021	-.152	-.138	-.191	.728	-.026	-.026
CTI023	-.570	.280	.083	.108	-1.266	-.692
CTI029	.684	1.768	.661	.945	-.167	-1.910
CTI030	-.626	-.903	-1.008	-.519	-.867	-.175
CTI039	1.502	-.041	-.494	.500	.527	.669
CTI040	.255	-.174	.095	-.293	.495	.038

STANDARDIZED RESIDUALS

	CTI006	CTI007	CTI009	CTI011	CTI013	CTI015
CTI006	.000					
CTI007	-.331	.000				
CTI009	-.173	-.092	.000			
CTI011	-.679	1.223	.000	.000		
CTI013	1.544	.824	4.388	.802	.000	
CTI015	.539	.206	-.153	-.122	-.059	.000
CTI016	-.304	-.832	-.112	-.464	-.436	.038
CTI021	1.992	-.242	.206	.484	.247	-.615
CTI023	.281	-1.029	-.143	-.251	2.423	.212
CTI029	.771	.161	-.377	-.559	2.089	.432
CTI030	1.126	1.713	.037	1.264	2.399	-.199
CTI039	-.085	1.258	-1.123	-.020	4.306	-.050
CTI040	-.334	.270	-.362	.993	4.138	-.373

STANDARDIZED RESIDUALS

	CTI016	CTI021	CTI023	CTI029	CTI030	CTI039
CTI016	.000					
CTI021	-.104	.000				
CTI023	.056	.000	.000			
CTI029	.034	1.690	-.014	.000		
CTI030	-2.129	.004	-1.024	.000	.000	
CTI039	-.170	1.279	-.537	.033	-1.021	.000
CTI040	.363	1.047	-.653	.090	.023	.000

STANDARDIZED RESIDUALS

	CTI040
CTI040	.000

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS

SMALLEST STANDARDIZED RESIDUAL = -2.875
MEDIAN STANDARDIZED RESIDUAL = .000
LARGEST STANDARDIZED RESIDUAL = 4.388

LARGEST NEGATIVE STANDARDIZED RESIDUALS

RESIDUAL FOR CTI001 AND CTI034 = -2.629
RESIDUAL FOR CTI004 AND CTI034 = -2.875

LARGEST POSITIVE STANDARDIZED RESIDUALS

RESIDUAL FOR CTI007 AND CTI034 = 3.112
RESIDUAL FOR CTI013 AND CTI035 = 3.253
RESIDUAL FOR CTI013 AND CTI036 = 3.244
RESIDUAL FOR CTI013 AND CTI001 = 2.797
RESIDUAL FOR CTI013 AND CTI005 = 2.630
RESIDUAL FOR CTI013 AND CTI009 = 4.388
RESIDUAL FOR CTI039 AND CTI013 = 4.306
RESIDUAL FOR CTI040 AND CTI013 = 4.138

STANDARD ERRORS

LAMBDA Y

	TRUST
CTI034	.000
CTI035	.077
CTI036	.075

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.081	.000	.000	.000	.000	.000
CTI004	.082	.000	.000	.000	.000	.000
CTI005	.000	.068	.000	.000	.000	.000
CTI006	.000	.069	.000	.000	.000	.000
CTI007	.000	.074	.000	.000	.000	.000
CTI009	.000	.000	.073	.000	.000	.000
CTI011	.000	.000	.076	.000	.000	.000
CTI013	.000	.000	.000	.082	.000	.000
CTI015	.000	.000	.000	.069	.000	.000
CTI016	.000	.000	.000	.073	.000	.000
CTI021	.000	.000	.000	.000	.070	.000
CTI023	.000	.000	.000	.000	.068	.000
CTI029	.000	.000	.000	.000	.000	.079
CTI030	.000	.000	.000	.000	.000	.079
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000

CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	.070
CTI040	.065

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.054	.079	.077	.049	.076	.052

GAMMA

	PROMISE
TRUST	.064

PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	.073	.000				
CONSISTE	.074	.049	.000			
DISCREET	.085	.069	.076	.000		
INTEGRIT	.076	.057	.060	.065	.000	
OPENNESS	.087	.071	.082	.089	.070	.000
PROMISE	.069	.050	.063	.073	.056	.076

PHI

	PROMISE
PROMISE	.000

PSI

	TRUST
TRUST	.026

THETA EPS

CTI034	CTI035	CTI036
.041	.014	.012

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.084	.078	.034	.036	.052	.057

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.059	.084	.049	.050	.039	.037

THETA DELTA

CTI029	CTI030	CTI039	CTI040
.074	.074	.038	.034

T-VALUES

LAMBDA Y

	TRUST
CTI034	.000

CTI035	15.315
CTI036	15.888

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	11.153	.000	.000	.000	.000	.000
CTI004	9.574	.000	.000	.000	.000	.000
CTI005	.000	13.550	.000	.000	.000	.000
CTI006	.000	12.992	.000	.000	.000	.000
CTI007	.000	10.813	.000	.000	.000	.000
CTI009	.000	.000	12.292	.000	.000	.000
CTI011	.000	.000	10.705	.000	.000	.000
CTI013	.000	.000	.000	7.246	.000	.000
CTI015	.000	.000	.000	14.055	.000	.000
CTI016	.000	.000	.000	11.965	.000	.000
CTI021	.000	.000	.000	.000	12.788	.000
CTI023	.000	.000	.000	.000	13.736	.000
CTI029	.000	.000	.000	.000	.000	11.287
CTI030	.000	.000	.000	.000	.000	11.254
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	12.811
CTI040	15.187

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.889	.956	.929	1.013	5.001	-.781

GAMMA

	PROMISE
TRUST	4.106

PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	7.526	.000				
CONSISTE	7.900	15.816	.000			
DISCREET	4.439	7.869	6.674	.000		
INTEGRIT	6.958	11.568	11.145	8.877	.000	
OPENNESS	4.651	7.817	5.733	3.299	8.123	.000
PROMISE	8.421	14.033	9.904	6.455	11.794	6.185

PHI

	PROMISE
PROMISE	.000

PSI

	TRUST
TRUST	5.146

THETA EPS

CTI034	CTI035	CTI036
7.770	4.828	2.109

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
2.229	4.875	4.522	5.359	7.012	3.333

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
5.682	7.778	1.436	4.943	5.147	3.486

THETA DELTA

CTI029	CTI030	CTI039	CTI040
2.913	2.968	5.431	.777

MODIFICATION INDICES AND ESTIMATED CHANGE

NO NON-ZERO MODIFICATION INDICES FOR LAMBDA Y

MODIFICATION INDICES FOR LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.000	1.890	.721	1.183	1.818	.217
CTI004	.000	1.890	.721	1.183	1.818	.217
CTI005	.103	.000	.076	.459	1.485	4.325
CTI006	.126	.000	.423	.458	2.539	2.376
CTI007	.001	.000	.205	.001	.184	.636
CTI009	.140	.135	.000	.027	.022	.137
CTI011	.140	.135	.000	.027	.022	.137
CTI013	2.269	2.392	4.263	.000	1.846	1.744
CTI015	.527	.029	.434	.000	.398	.153
CTI016	.001	1.012	.171	.000	.015	1.084
CTI021	.810	2.131	.581	.635	.000	2.215
CTI023	.810	2.131	.581	.635	.000	2.215
CTI029	1.089	2.379	.511	.430	4.584	.000
CTI030	1.089	2.379	.511	.430	4.584	.000
CTI039	.406	.655	.918	.031	.004	.270
CTI040	.406	.655	.918	.031	.004	.270

MODIFICATION INDICES FOR LAMBDA X

	PROMISE
CTI001	.665
CTI004	.665
CTI005	.055
CTI006	.393
CTI007	.235
CTI009	1.611
CTI011	1.611
CTI013	6.046
CTI015	2.309
CTI016	.110
CTI021	4.400
CTI023	4.400
CTI029	.050
CTI030	.050
CTI039	.000
CTI040	.000

ESTIMATED CHANGE FOR LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.000	-.211	-.154	.101	.186	.047
CTI004	.000	.185	.134	-.088	-.163	-.041
CTI005	.022	.000	.029	-.042	-.093	-.136
CTI006	-.024	.000	-.068	.042	.123	.102
CTI007	.002	.000	.051	.002	-.037	.061
CTI009	-.041	.084	.000	.015	-.020	-.034
CTI011	.037	-.076	.000	-.014	.018	.031
CTI013	.128	.142	.190	.000	.131	.107
CTI015	-.047	.013	-.051	.000	-.055	.023
CTI016	.002	-.073	-.030	.000	-.010	-.059
CTI021	.064	.127	.070	-.056	.000	.107
CTI023	-.067	-.132	-.073	.059	.000	-.111
CTI029	.089	-.209	-.075	.045	.308	.000
CTI030	-.089	.209	.075	-.045	-.307	.000
CTI039	.043	.074	-.074	.009	.005	-.029
CTI040	-.047	-.082	.082	-.010	-.006	.032

ESTIMATED CHANGE FOR LAMBDA X

	PROMISE
CTI001	-.132
CTI004	.115
CTI005	.018
CTI006	-.049
CTI007	.042
CTI009	-.141
CTI011	.128
CTI013	.206
CTI015	-.101
CTI016	.021
CTI021	.168
CTI023	-.176
CTI029	.021
CTI030	-.021
CTI039	.000
CTI040	.000

NO NON-ZERO MODIFICATION INDICES FOR BETA

NO NON-ZERO MODIFICATION INDICES FOR GAMMA

NO NON-ZERO MODIFICATION INDICES FOR PHI

NO NON-ZERO MODIFICATION INDICES FOR PSI

NO NON-ZERO MODIFICATION INDICES FOR THETA EPS

NO NON-ZERO MODIFICATION INDICES FOR THETA DELTA

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

LAMBDA Y

	TRUST
CTI034	1.000
CTI035	1.007
CTI036	1.013

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.586	.000	.000	.000	.000	.000
CTI004	.799	.000	.000	.000	.000	.000
CTI005	.000	.782	.000	.000	.000	.000
CTI006	.000	.598	.000	.000	.000	.000
CTI007	.000	.816	.000	.000	.000	.000
CTI009	.000	.000	.825	.000	.000	.000
CTI011	.000	.000	.698	.000	.000	.000
CTI013	.000	.000	.000	.744	.000	.000
CTI015	.000	.000	.000	.896	.000	.000
CTI016	.000	.000	.000	.849	.000	.000

CTI021	.000	.000	.000	.000	.826	.000
CTI023	.000	.000	.000	.000	.884	.000
CTI029	.000	.000	.000	.000	.000	.870
CTI030	.000	.000	.000	.000	.000	.845
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	.868
CTI040	.859

BETA

	TRUST
TRUST	.000

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	-.037	.145	.086	.076	.429	.034

GAMMA

	PROMISE
TRUST	.156

COVARIANCE MATRIX OF ETA AND KSI

	TRUST	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT
TRUST	.784					
AVAILABI	.308	1.000				
COMPETEN	.652	.319	1.000			
CONSISTE	.652	.305	.756	1.000		
DISCREET	.623	.453	.633	.663	1.000	
INTEGRIT	.744	.390	.664	.716	.713	1.000
OPENNESS	.542	.284	.432	.500	.477	.731
PROMISE	.604	.392	.676	.596	.591	.593

COVARIANCE MATRIX OF ETA AND KSI

	OPENNESS	PROMISE
OPENNESS	1.000	
PROMISE	.400	1.000

PSI

	TRUST
TRUST	.165

THETA EPS

CTI034	CTI035	CTI036
.217	.207	.196

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.658	.363	.390	.643	.336	.320

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.514	.448	.198	.281	.319	.219

THETA DELTA

CTI029	CTI030	CTI039	CTI040
.244	.288	.248	.263

SQUARED MULTIPLE CORRELATIONS FOR Y - VARIABLES

CTI034	CTI035	CTI036
.783	.794	.804

TOTAL COEFFICIENT OF DETERMINATION FOR Y - VARIABLES IS .920

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.343	.637	.611	.357	.665	.681

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.487	.553	.802	.720	.681	.781

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI029	CTI030	CTI039	CTI040
.757	.713	.752	.737

TOTAL COEFFICIENT OF DETERMINATION FOR X - VARIABLES IS 1.000

SQUARED MULTIPLE CORRELATIONS FOR STRUCTURAL EQUATIONS

TRUST
.790

TOTAL COEFFICIENT OF DETERMINATION FOR STRUCTURAL EQUATIONS IS .790

CHI-SQUARE WITH 248 DEGREES OF FREEDOM = 290.08 (P = .034)

GOODNESS OF FIT INDEX = .941

ROOT MEAN SQUARE RESIDUAL = .030

FITTED RESIDUALS

	CTI034	CTI035	CTI036	CTI001	CTI004	CTI005
CTI034	.000					
CTI035	.007	.000				
CTI036	-.013	.006	.000			
CTI001	.048	.071	.029	.000		
CTI004	-.030	-.001	-.029	.000	.000	
CTI005	-.012	-.036	-.036	-.036	.036	.000
CTI006	.050	.064	.082	-.027	-.089	-.044
CTI007	.008	-.064	.049	-.031	.033	.018
CTI009	-.012	.002	.002	.024	.041	.005
CTI011	-.014	.009	.017	-.034	-.083	.026
CTI013	-.013	-.012	.014	-.010	-.085	.007
CTI015	-.015	-.001	.012	.052	.011	.044

CTI016	.016	-.006	.001	.036	-.013	.032
CTI021	.026	.005	-.014	.018	.005	-.022
CTI023	-.007	-.010	.007	-.013	-.002	-.043
CTI029	.033	-.045	-.014	-.006	.008	-.012
CTI030	.053	-.027	.013	.038	-.022	-.060
CTI039	.022	-.012	.011	-.023	.000	-.017
CTI040	-.005	-.008	-.008	-.067	.037	.030

FITTED RESIDUALS

	CTI006	CTI007	CTI009	CTI011	CTI013	CTI015
CTI006	.000					
CTI007	-.002	.000				
CTI009	-.012	-.001	.000			
CTI011	.030	-.031	.000	.000		
CTI013	.061	-.065	.008	.007	.000	
CTI015	.033	-.013	.014	-.033	.002	.000
CTI016	-.048	-.041	.023	-.044	.010	-.005
CTI021	.014	.016	-.028	-.012	-.024	-.033
CTI023	.039	.019	.021	.001	.026	.006
CTI029	.043	.042	.025	.003	.044	.013
CTI030	-.030	.002	.006	-.072	-.022	-.032
CTI039	.050	-.023	-.040	.040	-.032	.034
CTI040	.027	-.015	-.029	.094	-.084	-.001

FITTED RESIDUALS

	CTI016	CTI021	CTI023	CTI029	CTI030	CTI039
CTI016	.000					
CTI021	-.025	.000				
CTI023	.033	.000	.000			
CTI029	.014	.027	-.009	.000		
CTI030	-.009	.007	-.014	.000	.000	
CTI039	.005	-.013	-.002	-.002	-.005	.000
CTI040	.006	-.030	.030	-.003	.012	.000

FITTED RESIDUALS

	CTI040
CTI040	.000

SUMMARY STATISTICS FOR FITTED RESIDUALS
SMALLEST FITTED RESIDUAL = -.089
MEDIAN FITTED RESIDUAL = .000
LARGEST FITTED RESIDUAL = .094

STANDARDIZED RESIDUALS

	CTI034	CTI035	CTI036	CTI001	CTI004	CTI005
CTI034	.000					
CTI035	.208	.000				
CTI036	-.403	.195	.000			
CTI001	1.846	2.707	1.112	.000		
CTI004	-1.126	-.037	-1.082	.000	.000	
CTI005	-.402	-1.241	-1.254	-1.415	1.362	.000
CTI006	1.797	2.296	2.957	-.582	-2.680	-1.546
CTI007	.281	-2.187	1.656	-1.649	1.266	.577
CTI009	-.411	.066	.066	1.711	1.560	.182
CTI011	-.502	.331	.603	-.942	-3.164	.946
CTI013	-.462	-.407	.483	-.912	-3.177	.239
CTI015	-.518	-.038	.402	1.960	.388	1.546
CTI016	.540	-.218	.036	1.350	-.473	1.150
CTI021	.855	.160	-.449	.677	.180	-.776
CTI023	-.234	-.309	.210	-.502	-.086	-1.504
CTI029	1.142	-1.587	-.499	-.396	.320	-.459
CTI030	1.853	-.962	.457	1.733	-.854	-2.228
CTI039	.757	-.417	.369	-.865	.002	-.606
CTI040	-.188	-.276	-.270	-2.543	1.379	1.054

STANDARDIZED RESIDUALS

	CTI006	CTI007	CTI009	CTI011	CTI013	CTI015
CTI006	.000					
CTI007	-.059	.000				

CTI009	-.423	-.033	.000			
CTI011	7.181	-1.106	.000	.000		
CTI013	2.202	-2.364	.270	.244	.000	
CTI015	1.224	-.469	.476	-1.177	.075	.000
CTI016	-1.761	-1.468	.793	-1.588	.330	-.154
CTI021	.528	.548	-.972	-.425	-.844	-1.125
CTI023	1.409	.652	.731	.038	.917	.195
CTI029	1.572	1.553	.898	.118	1.612	.466
CTI030	-.993	.086	.214	-2.673	-.810	-1.174
CTI039	1.818	-.812	-1.427	1.459	-1.167	1.212
CTI040	.989	-.537	-1.049	3.443	-3.045	-.026

STANDARDIZED RESIDUALS

	CTI016	CTI021	CTI023	CTI029	CTI030	CTI039
CTI016	.000					
CTI021	-.880	.000				
CTI023	1.126	.000	.000			
CTI029	.500	.921	-.313	.000		
CTI030	-.330	.245	-.483	.000	.000	
CTI039	.167	-.454	-.057	-.066	-.202	.000
CTI040	.216	-1.069	1.045	-.107	.433	.000

STANDARDIZED RESIDUALS

	CTI040
CTI040	.000

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS
SMALLEST STANDARDIZED RESIDUAL = -3.177
MEDIAN STANDARDIZED RESIDUAL = .000
LARGEST STANDARDIZED RESIDUAL = 7.181

LARGEST NEGATIVE STANDARDIZED RESIDUALS

RESIDUAL FOR CTI006 AND CTI004 = -2.680

RESIDUAL FOR CTI011 AND CTI004 = -3.164

RESIDUAL FOR CTI013 AND CTI004 = -3.177

RESIDUAL FOR CTI030 AND CTI011 = -2.673

RESIDUAL FOR CTI040 AND CTI013 = -3.045

LARGEST POSITIVE STANDARDIZED RESIDUALS

RESIDUAL FOR CTI001 AND CTI035 = 2.707

RESIDUAL FOR CTI006 AND CTI036 = 2.957

RESIDUAL FOR CTI011 AND CTI006 = 7.181

RESIDUAL FOR CTI040 AND CTI011 = 3.443

UNSPECIFIED TITLE

STANDARD ERRORS

LAMBDA Y

	TRUST
CTI034	.000
CTI035	.053
CTI036	.052

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.086	.000	.000	.000	.000	.000
CTI004	.100	.000	.000	.000	.000	.000
CTI005	.000	.060	.000	.000	.000	.000
CTI006	.000	.065	.000	.000	.000	.000
CTI007	.000	.059	.000	.000	.000	.000

CTI009	.000	.000	.063	.000	.000	.000
CTI011	.000	.000	.064	.000	.000	.000
CTI013	.000	.000	.000	.059	.000	.000
CTI015	.000	.000	.000	.054	.000	.000
CTI016	.000	.000	.000	.056	.000	.000
CTI021	.000	.000	.000	.000	.057	.000
CTI023	.000	.000	.000	.000	.055	.000
CTI029	.000	.000	.000	.000	.000	.060
CTI030	.000	.000	.000	.000	.000	.060
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	.058
CTI040	.059

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.051	.086	.091	.069	.108	.069

GAMMA

	PROMISE
TRUST	.063

PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	.085	.000				
CONSISTE	.088	.053	.000			
DISCREET	.077	.053	.055	.000		
INTEGRIT	.081	.053	.053	.044	.000	
OPENNESS	.084	.069	.068	.062	.045	.000
PROMISE	.080	.052	.062	.054	.056	.068

PHI

	PROMISE
PROMISE	.000

PSI

	TRUST
TRUST	.029

THETA EPS

CTI034	CTI035	CTI036
.028	.027	.026

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.095	.138	.052	.067	.050	.061

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.062	.049	.035	.039	.040	.037

THETA DELTA

CTI029	CTI030	CTI039	CTI040
.054	.053	.049	.049

T-VALUES

LAMBDA Y

	TRUST
CTI034	.000
CTI035	19.149
CTI036	19.393

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	6.772	.000	.000	.000	.000	.000
CTI004	7.953	.000	.000	.000	.000	.000
CTI005	.000	12.981	.000	.000	.000	.000
CTI006	.000	9.183	.000	.000	.000	.000
CTI007	.000	13.728	.000	.000	.000	.000
CTI009	.000	.000	13.085	.000	.000	.000
CTI011	.000	.000	10.886	.000	.000	.000
CTI013	.000	.000	.000	12.561	.000	.000
CTI015	.000	.000	.000	16.500	.000	.000
CTI016	.000	.000	.000	15.194	.000	.000
CTI021	.000	.000	.000	.000	14.598	.000
CTI023	.000	.000	.000	.000	16.108	.000
CTI029	.000	.000	.000	.000	.000	14.603
CTI030	.000	.000	.000	.000	.000	14.067
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	14.874
CTI040	14.681

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	-.729	1.688	.943	1.097	3.963	.495

GAMMA

	PROMISE
TRUST	2.495

PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	3.756	.000				
CONSISTE	3.447	14.360	.000			
DISCREET	5.888	11.864	12.008	.000		
INTEGRIT	4.839	12.551	13.452	16.162	.000	
OPENNESS	3.406	6.274	7.334	7.680	16.327	.000
PROMISE	4.877	13.097	9.659	10.955	10.643	5.888

PHI

	PROMISE
PROMISE	.000

PSI

	TRUST
TRUST	5.739

THETA EPS

CTI034	CTI035	CTI036
7.829	7.643	7.448

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
6.916	2.622	7.543	9.569	6.730	5.220

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
8.331	9.113	5.591	7.285	7.908	5.892

THETA DELTA

CTI029	CTI030	CTI039	CTI040
4.515	5.392	5.023	5.332

MODIFICATION INDICES AND ESTIMATED CHANGE

NO NON-ZERO MODIFICATION INDICES FOR LAMBDA Y

MODIFICATION INDICES FOR LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.000	.548	.027	4.510	.274	.198
CTI004	.000	.548	.027	4.510	.274	.198
CTI005	.398	.000	.147	1.981	2.655	2.006
CTI006	2.274	.000	.303	.190	1.182	.166
CTI007	.189	.000	.685	2.918	.594	1.197
CTI009	3.944	.320	.000	1.893	.388	1.031
CTI011	3.944	.320	.000	1.893	.388	1.031
CTI013	4.060	.496	.006	.000	.037	.171
CTI015	2.004	1.372	.001	.000	.412	.276
CTI016	.008	.397	.008	.000	.244	.050
CTI021	.020	.091	1.577	2.861	.000	1.092
CTI023	.020	.091	1.577	2.861	.000	1.092
CTI029	.126	1.698	1.704	1.596	3.477	.000
CTI030	.126	1.698	1.704	1.596	3.477	.000
CTI039	.080	.799	.739	.781	.072	.043
CTI040	.080	.799	.739	.781	.072	.043

MODIFICATION INDICES FOR LAMBDA X

	PROMISE
CTI001	1.894
CTI004	1.894
CTI005	.053
CTI006	1.569
CTI007	1.381
CTI009	5.578
CTI011	5.578
CTI013	3.480
CTI015	1.606
CTI016	.039
CTI021	.932
CTI023	.932
CTI029	.000
CTI030	.000
CTI039	.000
CTI040	.000

ESTIMATED CHANGE FOR LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.000	-.073	.017	.403	.062	.038
CTI004	.000	.100	-.023	-.550	-.085	-.052
CTI005	.044	.000	.054	.125	-.158	-.097
CTI006	-.113	.000	.072	.039	.103	.029
CTI007	.031	.000	-.120	-.155	.077	.076
CTI009	.179	-.124	.000	.187	.109	.099
CTI011	-.152	.105	.000	-.158	-.092	-.084
CTI013	-.139	-.055	.007	.000	.016	.026
CTI015	.088	.088	.002	.000	-.055	-.030
CTI016	.006	-.046	-.007	.000	.041	.013
CTI021	.009	-.026	-.128	-.152	.000	.098
CTI023	-.010	.028	.138	.163	.000	-.105
CTI029	.023	.097	.114	.096	.860	.000
CTI030	-.023	-.094	-.110	-.093	-.835	.000
CTI039	-.020	-.129	-.096	.082	-.027	-.013
CTI040	.019	.128	.095	-.082	.027	.013

ESTIMATED CHANGE FOR LAMBDA X

	PROMISE
CTI001	-.162
CTI004	.221
CTI005	.023
CTI006	.124
CTI007	-.120
CTI009	-.279
CTI011	.236
CTI013	-.132
CTI015	.085
CTI016	.013
CTI021	-.071
CTI023	.076
CTI029	.000
CTI030	.000
CTI039	.000
CTI040	.000

NO NON-ZERO MODIFICATION INDICES FOR BETA

NO NON-ZERO MODIFICATION INDICES FOR GAMMA

NO NON-ZERO MODIFICATION INDICES FOR PHI

NO NON-ZERO MODIFICATION INDICES FOR PSI

NO NON-ZERO MODIFICATION INDICES FOR THETA EPS

NO NON-ZERO MODIFICATION INDICES FOR THETA DELTA

MAX. MOD. INDEX IS 6.05 FOR ELEMENT (8, 7) OF LAMBDA X IN GROUP 1

Constrained model

```
THE FOLLOWING LISREL CONTROL LINES HAVE BEEN READ :


DA NG=2 NO=132 NI=19 MA=CM XM=-0.989898D+09
KM FI=c:\windows\temp\spssb9.tmp FO
(5E14.6)
LA
 CTI034   CTI035   CTI036   CTI001   CTI004   CTI005   CTI006   CTI007
 CTI009   CTI011   CTI013   CTI015   CTI016   CTI021   CTI023   CTI029
 CTI030   CTI039   CTI040
MO NX=16 NY=3 NK=7 NE=1 LX=FU,FI LY=FU,FI TD=DI TE=DI BE=FU GA=FU PS=ST PH=ST
LK
AVAILABI   COMPETEN   CONSISTE   DISCREET   INTEGRIT
OPENNESS   PROMISE
LE
TRUST
PA LX
2(1 0 0 0 0 0 0)
3(0 1 0 0 0 0 0)
2(0 0 1 0 0 0 0)
3(0 0 0 1 0 0 0)
2(0 0 0 0 1 0 0)
2(0 0 0 0 0 1 0)
2(0 0 0 0 0 0 1)
PA LY
3(1)
PA GA
1 1 1 1 1 1 1
PA BE
0
PA PS
1
FI LY(1,1)
VA 1.0 LY(1,1)
FR TD(1,1) TD(2,2) TD(3,3) TD(4,4) TD(5,5) TD(6,6) TD(7,7) TD(8,8) TD(9,9)
FR TD(10,10) TD(11,11) TD(12,12) TD(14,14) TD(15,15) TD(16,16)
FR TE(1,1) TE(2,2) TE(3,3)
OU AD=OFF RO SE TV RS MI

                              NUMBER OF INPUT VARIABLES 19

                              NUMBER OF Y - VARIABLES    3

                              NUMBER OF X - VARIABLES   16

                              NUMBER OF ETA - VARIABLES  1

                              NUMBER OF KSI - VARIABLES  7

                              NUMBER OF OBSERVATIONS   132

                              NUMBER OF GROUPS           2

THE FOLLOWING LISREL CONTROL LINES HAVE BEEN READ :


DA NO=226  NI=19 XM=-0.989898D+09
KM FI=c:\windows\temp\spssb9.tmp FO
(5E14.6)
LA
 CTI034   CTI035   CTI036   CTI001   CTI004   CTI005   CTI006   CTI007
 CTI009   CTI011   CTI013   CTI015   CTI016   CTI021   CTI023   CTI029
 CTI030   CTI039   CTI040
MO NX=16 NY=3 NK=7 NE=1 LX=PS LY=PS TD=PS TE=PS BE=PS GA=PS PS=PS PH=PS
LK
AVAILABI   COMPETEN   CONSISTE   DISCREET   INTEGRIT
OPENNESS   PROMISE
LE
TRUST
EQ GA(1,1,1) GA(2,1,1)
EQ GA(1,1,2) GA(2,1,2)
EQ GA(1,1,3) GA(2,1,3)
EQ GA(1,1,4) GA(2,1,4)
EQ GA(1,1,5) GA(2,1,5)
EQ GA(1,1,6) GA(2,1,6)
EQ GA(1,1,7) GA(2,1,7)
OU AD=OFF RO SE TV RS MI
```

NUMBER OF INPUT VARIABLES 19

NUMBER OF Y - VARIABLES 3

NUMBER OF X - VARIABLES 16

NUMBER OF ETA - VARIABLES 1

NUMBER OF KSI - VARIABLES 7

NUMBER OF OBSERVATIONS 226

NUMBER OF GROUPS 2

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

LAMBDA Y

	TRUST
CTI034	1.000
CTI035	1.152
CTI036	1.176

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.896	.000	.000	.000	.000	.000
CTI004	.803	.000	.000	.000	.000	.000
CTI005	.000	.931	.000	.000	.000	.000
CTI006	.000	.907	.000	.000	.000	.000
CTI007	.000	.808	.000	.000	.000	.000
CTI009	.000	.000	.910	.000	.000	.000
CTI011	.000	.000	.824	.000	.000	.000
CTI013	.000	.000	.000	.597	.000	.000
CTI015	.000	.000	.000	.972	.000	.000
CTI016	.000	.000	.000	.876	.000	.000
CTI021	.000	.000	.000	.000	.912	.000
CTI023	.000	.000	.000	.000	.951	.000
CTI029	.000	.000	.000	.000	.000	.901
CTI030	.000	.000	.000	.000	.000	.880
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	.894
CTI040	.992

BETA

	TRUST
TRUST	.000

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.002	.095	.097	.053	.425	-.005

GAMMA

	PROMISE
TRUST	.215

COVARIANCE MATRIX OF ETA AND KSI

	TRUST	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT
TRUST	.735					
AVAILABI	.488	1.000				
COMPETEN	.634	.564	1.000			
CONSISTE	.621	.598	.775	1.000		
DISCREET	.507	.387	.549	.513	1.000	
INTEGRIT	.728	.543	.671	.681	.590	1.000
OPENNESS	.456	.415	.556	.474	.303	.574
PROMISE	.652	.585	.708	.631	.476	.670

COVARIANCE MATRIX OF ETA AND KSI

	OPENNESS	PROMISE
OPENNESS	1.000	
PROMISE	.474	1.000

PSI

	TRUST
TRUST	.140

THETA EPS

CTI034	CTI035	CTI036
.321	.066	.027

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.207	.362	.151	.194	.362	.192

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.337	.650	.071	.246	.202	.132

THETA DELTA

CTI029	CTI030	CTI039	CTI040
.199	.236	.207	.024

SQUARED MULTIPLE CORRELATIONS FOR Y - VARIABLES

CTI034	CTI035	CTI036
.696	.937	.974

TOTAL COEFFICIENT OF DETERMINATION FOR Y - VARIABLES IS .982

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.795	.640	.851	.809	.644	.812

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.669	.354	.930	.758	.805	.872

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI029	CTI030	CTI039	CTI040
.803	.767	.794	.976

TOTAL COEFFICIENT OF DETERMINATION FOR X - VARIABLES IS 1.000

SQUARED MULTIPLE CORRELATIONS FOR STRUCTURAL EQUATIONS

TRUST
.810

TOTAL COEFFICIENT OF DETERMINATION FOR STRUCTURAL EQUATIONS IS .810

GOODNESS OF FIT INDEX = .899
ROOT MEAN SQUARE RESIDUAL = .041

FITTED RESIDUALS

	CTI034	CTI035	CTI036	CTI001	CTI004	CTI005
CTI034	-.054					
CTI035	-.049	-.040				
CTI036	-.051	-.041	-.042			
CTI001	-.096	.033	.037	-.008		
CTI004	-.113	-.037	-.044	-.008	-.007	
CTI005	.009	-.071	-.043	-.028	.042	-.018
CTI006	.012	-.053	-.030	-.030	-.001	-.011
CTI007	.083	.010	.012	-.010	-.028	-.016
CTI009	-.046	-.029	-.046	-.027	.001	-.002
CTI011	-.001	-.014	-.024	-.006	-.005	-.031
CTI013	.035	.098	.098	.092	.019	.083
CTI015	-.025	-.034	-.036	.002	-.053	-.028
CTI016	.001	-.039	-.031	.020	-.065	-.054
CTI021	-.061	-.056	-.058	.008	-.027	-.025
CTI023	-.078	-.039	-.047	-.014	-.072	-.050
CTI029	-.025	.015	-.026	.023	-.023	-.086
CTI030	-.064	-.073	-.077	-.022	-.041	-.011
CTI039	.050	.000	-.017	.015	.006	.016
CTI040	-.001	-.008	.005	-.017	.002	-.012

FITTED RESIDUALS

	CTI006	CTI007	CTI009	CTI011	CTI013	CTI015
CTI006	-.017					
CTI007	-.028	-.013				
CTI009	-.023	-.019	-.019			
CTI011	-.042	.032	-.017	-.015		
CTI013	.045	.020	.144	.019	-.006	
CTI015	.005	-.006	-.021	-.019	-.012	-.016
CTI016	-.025	-.043	-.018	-.030	-.025	-.012
CTI021	.054	-.030	-.015	-.004	-.005	-.046
CTI023	-.011	-.059	-.028	-.031	.073	-.014
CTI029	.015	-.007	-.027	-.033	.062	.000
CTI030	.037	.058	-.004	.039	.076	-.017
CTI039	-.013	.038	-.055	-.013	.144	-.012
CTI040	-.026	-.001	-.029	.022	.137	-.027

FITTED RESIDUALS

	CTI016	CTI021	CTI023	CTI029	CTI030	CTI039
CTI016	-.013					
CTI021	-.024	-.033				
CTI023	-.018	-.033	-.036			
CTI029	-.013	.040	-.023	-.010		
CTI030	-.083	-.013	-.050	-.010	-.010	
CTI039	-.016	.027	-.042	-.010	-.041	-.005
CTI040	.001	.015	-.051	-.011	-.004	-.006

FITTED RESIDUALS

	CTI040
CTI040	-.006

SUMMARY STATISTICS FOR FITTED RESIDUALS
SMALLEST FITTED RESIDUAL = -.113
MEDIAN FITTED RESIDUAL = -.015
LARGEST FITTED RESIDUAL = .144

STANDARDIZED RESIDUALS

	CTI034	CTI035	CTI036	CTI001	CTI004	CTI005
CTI034	-1.077					
CTI035	-1.065	-.805				
CTI036	-1.102	-.836	-.837			
CTI001	-2.528	.850	.959	-.173		
CTI004	-3.017	-.975	-1.158	-.179	-.139	
CTI005	.217	-1.699	-1.019	-.753	1.133	-.359
CTI006	.306	-1.279	-.721	-.809	-.019	-.251
CTI007	2.121	.238	.292	-.272	-.756	-.384
CTI009	-1.140	-.696	-1.103	-.708	.019	-.041
CTI011	-.037	-.339	-.590	-.164	-.150	-.775
CTI013	.976	2.685	2.682	2.649	.545	2.323
CTI015	-.641	-.843	-.891	.059	-1.477	-.736
CTI016	.039	-1.008	-.805	.546	-1.840	-1.438
CTI021	-1.454	-1.293	-1.329	.216	-.726	-.625
CTI023	-1.842	-.874	-1.046	-.371	-1.927	-1.248
CTI029	-.668	.396	-.670	.638	-.632	-2.264
CTI030	-1.700	-1.923	-2.021	-.619	-1.151	-.303
CTI039	1.242	-.002	-.418	.391	.151	.398
CTI040	-.032	-.177	.119	-.442	.053	-.287

STANDARDIZED RESIDUALS

	CTI006	CTI007	CTI009	CTI011	CTI013	CTI015
CTI006	-.341					
CTI007	-.672	-.271				
CTI009	-.565	-.471	-.384			
CTI011	-1.069	.818	-.386	-.316		
CTI013	1.265	.572	4.056	.528	-.122	
CTI015	.140	-.165	-.560	-.523	-.300	-.319
CTI016	-.662	-1.161	-.491	-.831	-.662	-.274
CTI021	1.360	-.777	-.385	-.103	-.143	-1.173
CTI023	-.280	-1.523	-.700	-.797	1.996	-.348
CTI029	.392	-.188	-.746	-.917	1.792	-.012
CTI030	.994	1.573	-.121	1.081	2.199	-.478
CTI039	-.329	1.003	-1.434	-.352	4.089	-.334
CTI040	-.635	-.032	-.749	.583	3.879	-.710

STANDARDIZED RESIDUALS

	CTI016	CTI021	CTI023	CTI029	CTI030	CTI039
CTI016	-.260					
CTI021	-.636	-.666				
CTI023	-.462	-.717	-.722			
CTI029	-.366	1.054	-.589	-.208		
CTI030	-2.362	-.333	-1.313	-.227	-.199	
CTI039	-.434	.681	-1.069	-.284	-1.115	-.109
CTI040	.039	.368	-1.264	-.287	-.117	-.135

STANDARDIZED RESIDUALS

	CTI040
CTI040	-.133

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS
SMALLEST STANDARDIZED RESIDUAL = -3.017
MEDIAN STANDARDIZED RESIDUAL = -.355
LARGEST STANDARDIZED RESIDUAL = 4.089

LARGEST NEGATIVE STANDARDIZED RESIDUALS

RESIDUAL FOR CTI004 AND CTI034 = -3.017

LARGEST POSITIVE STANDARDIZED RESIDUALS

RESIDUAL FOR CTI013 AND CTI035 = 2.685

RESIDUAL FOR CTI013 AND CTI036 = 2.682

RESIDUAL FOR CTI013 AND CTI001 = 2.649

RESIDUAL FOR CTI013 AND CTI009 = 4.056

RESIDUAL FOR CTI039 AND CTI013 = 4.089

RESIDUAL FOR CTI040 AND CTI013 = 3.879

STANDARD ERRORS

LAMBDA Y

	TRUST
CTI034	.000
CTI035	.063
CTI036	.061

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.080	.000	.000	.000	.000	.000
CTI004	.082	.000	.000	.000	.000	.000
CTI005	.000	.066	.000	.000	.000	.000
CTI006	.000	.068	.000	.000	.000	.000
CTI007	.000	.073	.000	.000	.000	.000
CTI009	.000	.000	.072	.000	.000	.000
CTI011	.000	.000	.075	.000	.000	.000
CTI013	.000	.000	.000	.082	.000	.000
CTI015	.000	.000	.000	.068	.000	.000
CTI016	.000	.000	.000	.072	.000	.000
CTI021	.000	.000	.000	.000	.067	.000
CTI023	.000	.000	.000	.000	.065	.000
CTI029	.000	.000	.000	.000	.000	.078
CTI030	.000	.000	.000	.000	.000	.078
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	.068
CTI040	.062

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.037	.058	.058	.040	.062	.040

GAMMA

	PROMISE
TRUST	.045

PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	.071	.000				
CONSISTE	.072	.047	.000			
DISCREET	.084	.067	.074	.000		
INTEGRIT	.073	.055	.058	.063	.000	
OPENNESS	.086	.070	.080	.087	.068	.000
PROMISE	.067	.049	.061	.071	.053	.074

PHI

	PROMISE
PROMISE	.000

PSI

	TRUST
TRUST	.026

THETA EPS

CTI034	CTI035	CTI036
.041	.014	.012

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.082	.077	.033	.036	.052	.056

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.059	.084	.049	.050	.039	.036

THETA DELTA

CTI029	CTI030	CTI039	CTI040
.075	.073	.038	.035

T-VALUES

LAMBDA Y

	TRUST
CTI034	.000
CTI035	18.250
CTI036	19.214

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	11.146	.000	.000	.000	.000	.000
CTI004	9.822	.000	.000	.000	.000	.000
CTI005	.000	14.042	.000	.000	.000	.000
CTI006	.000	13.416	.000	.000	.000	.000
CTI007	.000	11.109	.000	.000	.000	.000
CTI009	.000	.000	12.672	.000	.000	.000
CTI011	.000	.000	11.012	.000	.000	.000
CTI013	.000	.000	.000	7.328	.000	.000
CTI015	.000	.000	.000	14.306	.000	.000
CTI016	.000	.000	.000	12.156	.000	.000
CTI021	.000	.000	.000	.000	13.683	.000

CTI023	.000	.000	.000	.000	14.718	.000
CTI029	.000	.000	.000	.000	.000	11.563
CTI030	.000	.000	.000	.000	.000	11.232
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	13.244
CTI040	15.932

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.048	1.631	1.657	1.322	6.879	-.133

GAMMA

	PROMISE
TRUST	4.792

PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	7.901	.000				
CONSISTE	8.293	16.386	.000			
DISCREET	4.593	8.184	6.955	.000		
INTEGRIT	7.414	12.175	11.663	9.294	.000	
OPENNESS	4.828	7.990	5.899	3.488	8.432	.000
PROMISE	8.744	14.535	10.370	6.734	12.617	6.404

PHI

	PROMISE
PROMISE	.000

PSI

	TRUST
TRUST	5.425

THETA EPS

CTI034	CTI035	CTI036
7.748	4.749	2.257

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
2.516	4.693	4.522	5.384	7.010	3.409

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
5.693	7.778	1.456	4.955	5.196	3.678

THETA DELTA

CTI029	CTI030	CTI039	CTI040
2.670	3.215	5.376	.671

MODIFICATION INDICES AND ESTIMATED CHANGE

MODIFICATION INDICES FOR LAMBDA Y

	TRUST
CTI034	.300
CTI035	.000
CTI036	.000

ESTIMATED CHANGE FOR LAMBDA Y

	TRUST
CTI034	-.061
CTI035	.000
CTI036	.000

MODIFICATION INDICES FOR LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.000	1.068	.180	1.530	2.801	.475
CTI004	.000	1.078	.185	1.525	2.783	.469
CTI005	.107	.000	.077	.453	1.390	4.338
CTI006	.149	.000	.419	.473	2.520	2.633
CTI007	.008	.000	.222	.001	.160	.675
CTI009	.214	.207	.000	.039	.004	.044
CTI011	.070	.168	.000	.032	.026	.122
CTI013	2.218	2.383	4.224	.000	1.844	1.702
CTI015	.536	.035	.403	.000	.383	.156
CTI016	.000	1.006	.171	.000	.009	.966
CTI021	.459	1.789	.450	.685	.000	2.443
CTI023	1.576	1.729	.431	.619	.000	1.377
CTI029	.646	3.661	.937	.297	3.499	.000
CTI030	.630	3.666	.937	.297	3.506	.000
CTI039	.449	.936	.803	.050	.037	.183
CTI040	.554	.350	1.442	.005	.050	.550

MODIFICATION INDICES FOR LAMBDA X

	PROMISE
CTI001	.214
CTI004	.212
CTI005	.027
CTI006	.424
CTI007	.181
CTI009	1.882
CTI011	1.386
CTI013	6.009
CTI015	2.460
CTI016	.110
CTI021	2.970
CTI023	5.807
CTI029	.001
CTI030	.002
CTI039	.000
CTI040	.000

ESTIMATED CHANGE FOR LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.000	-.162	-.079	.113	.233	.069
CTI004	.000	.146	.072	-.101	-.208	-.061
CTI005	.022	.000	.029	-.042	-.092	-.137

CTI006	-.027	.000	-.068	.043	.124	.108
CTI007	-.007	.000	.054	.002	-.035	.063
CTI009	-.052	.102	.000	.018	-.009	-.019
CTI011	.027	-.083	.000	-.015	.020	.029
CTI013	.128	.143	.191	.000	.132	.106
CTI015	-.048	.015	-.049	.000	-.054	.024
CTI016	-.001	-.073	-.030	.000	-.008	-.056
CTI021	.048	.114	.060	-.058	.000	.111
CTI023	-.091	-.115	-.061	.056	.000	-.086
CTI029	.071	-.265	-.104	.038	.291	.000
CTI030	-.069	.259	.102	-.037	-.285	.000
CTI039	.046	.093	-.072	.012	.017	-.024
CTI040	-.056	-.063	.108	-.004	.022	.046

ESTIMATED CHANGE FOR LAMBDA X

	PROMISE
CTI001	-.075
CTI004	.067
CTI005	.013
CTI006	-.051
CTI007	.037
CTI009	-.152
CTI011	.119
CTI013	.206
CTI015	-.105
CTI016	.021
CTI021	.136
CTI023	-.196
CTI029	-.003
CTI030	.004
CTI039	.000
CTI040	.000

MODIFICATION INDICES FOR BETA

	TRUST
TRUST	.300

ESTIMATED CHANGE FOR BETA

	TRUST
TRUST	-.061

MODIFICATION INDICES FOR GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.605	.426	.469	.198	1.111	1.542

MODIFICATION INDICES FOR GAMMA

	PROMISE
TRUST	.643

ESTIMATED CHANGE FOR GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.028	-.024	-.024	-.012	-.044	-.036

ESTIMATED CHANGE FOR GAMMA

	PROMISE
TRUST	.032

MODIFICATION INDICES FOR PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	.000	.426				
CONSISTE	.000	.000	.469			
DISCREET	.000	.000	.000	.198		

INTEGRIT	.000	.000	.000	.000	1.111	
OPENNESS	.000	.000	.000	.000	.000	1.541
PROMISE	.000	.000	.000	.000	.000	.000

MODIFICATION INDICES FOR PHI

	PROMISE
PROMISE	.643

ESTIMATED CHANGE FOR PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	.000	-1.041				
CONSISTE	.000	.000	-1.098			
DISCREET	.000	.000	.000	-1.141		
INTEGRIT	.000	.000	.000	.000	-.411	
OPENNESS	.000	.000	.000	.000	.000	31.405
PROMISE	.000	.000	.000	.000	.000	.000

ESTIMATED CHANGE FOR PHI

	PROMISE
PROMISE	.542

NO NON-ZERO MODIFICATION INDICES FOR PSI

NO NON-ZERO MODIFICATION INDICES FOR THETA EPS

NO NON-ZERO MODIFICATION INDICES FOR THETA DELTA

LISREL ESTIMATES (MAXIMUM LIKELIHOOD)

LAMBDA Y

	TRUST
CTI034	1.000
CTI035	1.017
CTI036	1.020

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.608	.000	.000	.000	.000	.000
CTI004	.767	.000	.000	.000	.000	.000
CTI005	.000	.778	.000	.000	.000	.000
CTI006	.000	.593	.000	.000	.000	.000
CTI007	.000	.812	.000	.000	.000	.000
CTI009	.000	.000	.820	.000	.000	.000
CTI011	.000	.000	.692	.000	.000	.000
CTI013	.000	.000	.000	.739	.000	.000
CTI015	.000	.000	.000	.890	.000	.000
CTI016	.000	.000	.000	.843	.000	.000
CTI021	.000	.000	.000	.000	.816	.000
CTI023	.000	.000	.000	.000	.873	.000
CTI029	.000	.000	.000	.000	.000	.868
CTI030	.000	.000	.000	.000	.000	.836
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000

CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	.868
CTI040	.855

BETA

	TRUST
TRUST	.000

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.002	.095	.097	.053	.425	-.005

GAMMA

	PROMISE
TRUST	.215

COVARIANCE MATRIX OF ETA AND KSI

	TRUST	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT
TRUST	.753					
AVAILABI	.331	1.000				
COMPETEN	.625	.315	1.000			
CONSISTE	.631	.304	.754	1.000		
DISCREET	.603	.462	.628	.659	1.000	
INTEGRIT	.717	.385	.661	.712	.709	1.000
OPENNESS	.506	.287	.427	.497	.471	.732
PROMISE	.614	.389	.675	.592	.591	.585

COVARIANCE MATRIX OF ETA AND KSI

	OPENNESS	PROMISE
OPENNESS	1.000	
PROMISE	.399	1.000

PSI

	TRUST
TRUST	.166

THETA EPS

CTI034	CTI035	CTI036
.219	.203	.197

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.631	.410	.388	.645	.334	.319

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.515	.448	.198	.281	.319	.220

THETA DELTA

CTI029	CTI030	CTI039	CTI040
.238	.293	.247	.269

SQUARED MULTIPLE CORRELATIONS FOR Y - VARIABLES

CTI034	CTI035	CTI036
.774	.793	.799

TOTAL COEFFICIENT OF DETERMINATION FOR Y - VARIABLES IS .918

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.369	.589	.610	.353	.664	.678

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.482	.549	.800	.717	.676	.776

SQUARED MULTIPLE CORRELATIONS FOR X - VARIABLES

CTI029	CTI030	CTI039	CTI040
.760	.705	.753	.731

TOTAL COEFFICIENT OF DETERMINATION FOR X - VARIABLES IS 1.000

SQUARED MULTIPLE CORRELATIONS FOR STRUCTURAL EQUATIONS

TRUST
.779

TOTAL COEFFICIENT OF DETERMINATION FOR STRUCTURAL EQUATIONS IS .779

CHI-SQUARE WITH 255 DEGREES OF FREEDOM = 295.31 (P = .042)

GOODNESS OF FIT INDEX = .941

ROOT MEAN SQUARE RESIDUAL = .033

FITTED RESIDUALS

	CTI034	CTI035	CTI036	CTI001	CTI004	CTI005
CTI034	.029					
CTI035	.031	.020				
CTI036	.013	.025	.020			
CTI001	.027	.048	.006	.001		
CTI004	-.038	-.012	-.039	.001	.002	
CTI005	.011	-.018	-.017	-.039	.047	.007
CTI006	.069	.079	.098	-.028	-.080	-.038
CTI007	.032	-.045	.069	-.034	.045	.024
CTI009	.009	.018	.019	.020	.051	.013
CTI011	.004	.024	.033	-.037	-.074	.033
CTI013	.004	.002	.028	-.020	-.078	.013
CTI015	.006	.015	.029	.040	.019	.052
CTI016	.036	.009	.018	.024	-.004	.040
CTI021	.056	.029	.012	.015	.021	-.013
CTI023	.025	.017	.035	-.016	.015	-.033
CTI029	.065	-.017	.016	-.013	.015	-.007
CTI030	.087	.004	.045	.033	-.015	-.053
CTI039	.013	-.026	-.002	-.029	.013	-.014
CTI040	-.012	-.020	-.018	-.072	.051	.035

FITTED RESIDUALS

	CTI006	CTI007	CTI009	CTI011	CTI013	CTI015
CTI006	.004					
CTI007	.004	.008				
CTI009	-.005	.007	.010			
CTI011	.036	-.024	.009	.007		
CTI013	.067	-.059	.015	.014	.007	
CTI015	.040	-.005	.023	-.024	.011	.010
CTI016	-.041	-.034	.031	-.036	.018	.005
CTI021	.022	.024	-.017	-.002	-.013	-.020
CTI023	.047	.029	.034	.013	.038	.020
CTI029	.047	.047	.030	.009	.050	.021

CTI030	-.024	.010	.014	-.065	-.014	-.022
CTI039	.053	-.020	-.035	.045	-.030	.038
CTI040	.032	-.010	-.022	.101	-.080	.005

FITTED RESIDUALS

	CTI016	CTI021	CTI023	CTI029	CTI030	CTI039
CTI016	.009					
CTI021	-.013	.016				
CTI023	.047	.018	.019			
CTI029	.021	.034	-.001	.010		
CTI030	.000	.018	-.002	.009	.009	
CTI039	.008	-.002	.010	.000	-.002	.001
CTI040	.011	-.018	.044	.000	.017	.003

FITTED RESIDUALS

	CTI040
CTI040	.001

SUMMARY STATISTICS FOR FITTED RESIDUALS
SMALLEST FITTED RESIDUAL = -.080
MEDIAN FITTED RESIDUAL = .010
LARGEST FITTED RESIDUAL = .101

STANDARDIZED RESIDUALS

	CTI034	CTI035	CTI036	CTI001	CTI004	CTI005
CTI034	.807					
CTI035	.955	.549				
CTI036	.391	.768	.553			
CTI001	1.058	1.837	.248	.029		
CTI004	-1.452	-.445	-1.477	.049	.047	
CTI005	.402	-.620	-.587	-1.693	1.809	.201
CTI006	2.524	2.888	3.598	-.630	-2.239	-1.351
CTI007	1.125	-1.566	2.399	-2.307	1.729	.776
CTI009	.310	.620	.668	10.038	1.945	.439
CTI011	.155	.850	1.170	-1.090	-8.859	1.205
CTI013	.161	.061	1.010	-2.809	-2.924	.481
CTI015	.205	.514	1.011	1.506	.714	1.845
CTI016	1.260	.310	.616	.918	-.167	1.434
CTI021	1.890	.977	.407	.589	.790	-.477
CTI023	.848	.567	1.156	-.596	.575	-1.177
CTI029	2.354	-.601	.559	-6.029	.575	-.267
CTI030	3.169	.127	1.625	1.921	-.563	-1.982
CTI039	.455	-.906	-.075	-1.093	.475	-.506
CTI040	-.409	-.675	-.626	-2.732	1.899	1.237

STANDARDIZED RESIDUALS

	CTI006	CTI007	CTI009	CTI011	CTI013	CTI015
CTI006	.116					
CTI007	.150	.218				
CTI009	-.182	.227	.277			
CTI011	2.789	-.860	.306	.197		
CTI013	2.211	-2.138	.550	.510	.194	
CTI015	1.496	-.185	.806	-.879	.348	.283
CTI016	-3.018	-1.204	1.114	-1.306	.598	.146
CTI021	1.766	.872	-.593	-.060	-.480	-.706
CTI023	1.742	1.019	1.185	.453	1.350	.686
CTI029	1.613	1.769	1.121	.323	1.864	.753
CTI030	-.731	.362	.515	-2.421	-.507	-.820
CTI039	1.944	-.712	-1.237	1.664	-1.074	1.334
CTI040	1.171	-.359	-.789	3.719	-2.898	.163

STANDARDIZED RESIDUALS

	CTI016	CTI021	CTI023	CTI029	CTI030	CTI039
CTI016	.254					
CTI021	-.473	.453				
CTI023	1.615	.567	.520			
CTI029	.775	1.181	-.030	.264		
CTI030	.018	.618	-.076	.291	.245	

CTI039	.280	-.076	.370	-.011	-.071	.023
CTI040	.401	-.632	1.557	.000	.617	.101

STANDARDIZED RESIDUALS

	CTI040
CTI040	.022

SUMMARY STATISTICS FOR STANDARDIZED RESIDUALS

SMALLEST STANDARDIZED RESIDUAL = -8.859
MEDIAN STANDARDIZED RESIDUAL = .336
LARGEST STANDARDIZED RESIDUAL = 10.038

LARGEST NEGATIVE STANDARDIZED RESIDUALS

RESIDUAL FOR CTI011 AND CTI004 = -8.859
RESIDUAL FOR CTI013 AND CTI001 = -2.809
RESIDUAL FOR CTI013 AND CTI004 = -2.924
RESIDUAL FOR CTI016 AND CTI006 = -3.018
RESIDUAL FOR CTI029 AND CTI001 = -6.029
RESIDUAL FOR CTI040 AND CTI001 = -2.732
RESIDUAL FOR CTI040 AND CTI013 = -2.898

LARGEST POSITIVE STANDARDIZED RESIDUALS

RESIDUAL FOR CTI006 AND CTI035 = 2.888
RESIDUAL FOR CTI006 AND CTI036 = 3.598
RESIDUAL FOR CTI009 AND CTI001 = 10.038
RESIDUAL FOR CTI011 AND CTI006 = 2.789
RESIDUAL FOR CTI030 AND CTI034 = 3.169
RESIDUAL FOR CTI040 AND CTI011 = 3.719

STANDARD ERRORS

LAMBDA Y

	TRUST
CTI034	.000
CTI035	.052
CTI036	.052

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.087	.000	.000	.000	.000	.000
CTI004	.097	.000	.000	.000	.000	.000
CTI005	.000	.060	.000	.000	.000	.000
CTI006	.000	.065	.000	.000	.000	.000
CTI007	.000	.059	.000	.000	.000	.000
CTI009	.000	.000	.062	.000	.000	.000
CTI011	.000	.000	.064	.000	.000	.000
CTI013	.000	.000	.000	.059	.000	.000
CTI015	.000	.000	.000	.053	.000	.000
CTI016	.000	.000	.000	.055	.000	.000
CTI021	.000	.000	.000	.000	.055	.000
CTI023	.000	.000	.000	.000	.053	.000
CTI029	.000	.000	.000	.000	.000	.059
CTI030	.000	.000	.000	.000	.000	.060
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	.057
CTI040	.058

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.037	.058	.058	.040	.062	.040

GAMMA

	PROMISE
TRUST	.045

PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	.086	.000				
CONSISTE	.090	.053	.000			
DISCREET	.076	.053	.055	.000		
INTEGRIT	.081	.053	.054	.044	.000	
OPENNESS	.084	.069	.068	.062	.044	.000
PROMISE	.081	.052	.062	.054	.056	.068

PHI

	PROMISE
PROMISE	.000

PSI

	TRUST
TRUST	.028

THETA EPS

CTI034	CTI035	CTI036
.028	.027	.027

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
.097	.128	.052	.067	.050	.061

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
.062	.049	.036	.039	.040	.036

THETA DELTA

CTI029	CTI030	CTI039	CTI040
.054	.054	.048	.048

T-VALUES

LAMBDA Y

	TRUST
CTI034	.000
CTI035	19.450
CTI036	19.610

LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	6.992	.000	.000	.000	.000	.000
CTI004	7.914	.000	.000	.000	.000	.000
CTI005	.000	13.048	.000	.000	.000	.000
CTI006	.000	9.146	.000	.000	.000	.000
CTI007	.000	13.820	.000	.000	.000	.000
CTI009	.000	.000	13.151	.000	.000	.000
CTI011	.000	.000	10.863	.000	.000	.000
CTI013	.000	.000	.000	12.594	.000	.000
CTI015	.000	.000	.000	16.657	.000	.000
CTI016	.000	.000	.000	15.297	.000	.000
CTI021	.000	.000	.000	.000	14.824	.000
CTI023	.000	.000	.000	.000	16.448	.000
CTI029	.000	.000	.000	.000	.000	14.656
CTI030	.000	.000	.000	.000	.000	13.985
CTI039	.000	.000	.000	.000	.000	.000
CTI040	.000	.000	.000	.000	.000	.000

LAMBDA X

	PROMISE
CTI001	.000
CTI004	.000
CTI005	.000
CTI006	.000
CTI007	.000
CTI009	.000
CTI011	.000
CTI013	.000
CTI015	.000
CTI016	.000
CTI021	.000
CTI023	.000
CTI029	.000
CTI030	.000
CTI039	15.131
CTI040	14.836

GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.048	1.631	1.657	1.322	6.879	-.133

GAMMA

	PROMISE
TRUST	4.792

PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	3.662	.000				
CONSISTE	3.395	14.208	.000			
DISCREET	6.038	11.765	11.893	.000		
INTEGRIT	4.759	12.522	13.304	16.138	.000	

OPENNESS	3.402	6.226	7.289	7.602	16.614	.000
PROMISE	4.813	13.068	9.549	10.993	10.400	5.903

PHI

	PROMISE
PROMISE	.000

PSI

	TRUST
TRUST	5.870

THETA EPS

CTI034	CTI035	CTI036
7.892	7.555	7.435

THETA DELTA

CTI001	CTI004	CTI005	CTI006	CTI007	CTI009
6.521	3.218	7.502	9.568	6.677	5.221

THETA DELTA

CTI011	CTI013	CTI015	CTI016	CTI021	CTI023
8.344	9.110	5.580	7.280	7.910	6.064

THETA DELTA

CTI029	CTI030	CTI039	CTI040
4.372	5.456	5.094	5.546

MODIFICATION INDICES AND ESTIMATED CHANGE

MODIFICATION INDICES FOR LAMBDA Y

	TRUST
CTI034	.300
CTI035	.000
CTI036	.000

ESTIMATED CHANGE FOR LAMBDA Y

	TRUST
CTI034	.061
CTI035	.000
CTI036	.000

MODIFICATION INDICES FOR LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.000	1.359	.047	1.617	.000	.012
CTI004	.000	1.351	.045	1.636	.000	.013
CTI005	.379	.000	.120	1.972	2.853	2.141
CTI006	1.676	.000	.348	.212	1.236	.154
CTI007	.174	.000	.742	3.007	.539	1.065
CTI009	4.151	.402	.000	1.759	.270	.747
CTI011	3.579	.339	.000	1.800	.424	1.060
CTI013	3.924	.485	.009	.000	.058	.168
CTI015	2.031	1.317	.000	.000	.481	.304
CTI016	.013	.403	.010	.000	.216	.039
CTI021	.137	.111	1.535	2.624	.000	.678
CTI023	.033	.101	1.513	2.861	.000	1.511
CTI029	.032	1.571	1.467	1.384	1.893	.000
CTI030	.035	1.570	1.468	1.386	1.899	.000
CTI039	.010	1.548	1.275	.359	.350	.197
CTI040	.050	.523	.529	.790	.020	.007

MODIFICATION INDICES FOR LAMBDA X

	PROMISE
CTI001	3.171
CTI004	3.179
CTI005	.067
CTI006	1.904
CTI007	1.209
CTI009	4.804
CTI011	5.879
CTI013	3.319
CTI015	1.656
CTI016	.042
CTI021	.451
CTI023	1.782
CTI029	.009
CTI030	.008
CTI039	.000
CTI040	.000

ESTIMATED CHANGE FOR LAMBDA X

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
CTI001	.000	-.117	-.022	.271	.000	.010
CTI004	.000	.147	.028	-.344	-.001	-.013
CTI005	.044	.000	.048	.124	-.162	-.100
CTI006	-.098	.000	.077	.041	.105	.028
CTI007	.030	.000	-.125	-.157	.073	.072
CTI009	.188	-.136	.000	.178	.090	.084
CTI011	-.148	.106	.000	-.152	-.095	-.085
CTI013	-.141	-.054	.008	.000	.020	.026
CTI015	.091	.085	.000	.000	-.059	-.032
CTI016	.007	-.046	-.008	.000	.038	.011
CTI021	.024	-.028	-.123	-.140	.000	.075
CTI023	.012	.028	.128	.153	.000	-.117
CTI029	.012	.094	.106	.090	.663	.000
CTI030	-.012	-.090	-.102	-.086	-.640	.000
CTI039	-.007	-.163	-.120	.054	-.056	-.028
CTI040	.015	.093	.076	-.078	.013	.005

ESTIMATED CHANGE FOR LAMBDA X

	PROMISE
CTI001	-.211
CTI004	.267
CTI005	.026
CTI006	.136
CTI007	-.112
CTI009	-.258
CTI011	.241
CTI013	-.129
CTI015	.086
CTI016	.014
CTI021	-.048
CTI023	.100
CTI029	-.007
CTI030	.006
CTI039	.000
CTI040	.000

MODIFICATION INDICES FOR BETA

	TRUST
TRUST	.300

ESTIMATED CHANGE FOR BETA

	TRUST
TRUST	.061

MODIFICATION INDICES FOR GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	.605	.426	.469	.198	1.111	1.542

MODIFICATION INDICES FOR GAMMA

	PROMISE
TRUST	.643

ESTIMATED CHANGE FOR GAMMA

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
TRUST	-.025	.025	.029	.018	.044	.047

ESTIMATED CHANGE FOR GAMMA

	PROMISE
TRUST	-.027

MODIFICATION INDICES FOR PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	.000	.426				
CONSISTE	.000	.000	.469			
DISCREET	.000	.000	.000	.198		
INTEGRIT	.000	.000	.000	.000	1.111	
OPENNESS	.000	.000	.000	.000	.000	1.541
PROMISE	.000	.000	.000	.000	.000	.000

MODIFICATION INDICES FOR PHI

	PROMISE
PROMISE	.643

ESTIMATED CHANGE FOR PHI

	AVAILABI	COMPETEN	CONSISTE	DISCREET	INTEGRIT	OPENNESS
AVAILABI	.000					
COMPETEN	.000	1.041				
CONSISTE	.000	.000	1.098			
DISCREET	.000	.000	.000	1.141		
INTEGRIT	.000	.000	.000	.000	.411	
OPENNESS	.000	.000	.000	.000	.000	-31.404
PROMISE	.000	.000	.000	.000	.000	.000

ESTIMATED CHANGE FOR PHI

	PROMISE
PROMISE	-.542

NO NON-ZERO MODIFICATION INDICES FOR PSI

NO NON-ZERO MODIFICATION INDICES FOR THETA EPS

NO NON-ZERO MODIFICATION INDICES FOR THETA DELTA

MAX. MOD. INDEX IS 6.01 FOR ELEMENT (8, 7) OF LAMBDA X IN GROUP 1

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